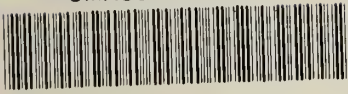


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OFFICE OF THE INSPECTOR GENERAL

The Pollard Middle School Construction Project in Needham:
A Management Review

Robert A. Cerasoli
Inspector General
June 1995



The Commonwealth of Massachusetts

Office of the Inspector General

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June 1995

His Excellency Governor William F. Weld

The Honorable Senate President William M. Bulger

The Honorable Speaker of the House Charles F. Flaherty

The Honorable Thomas F. Birmingham

The Honorable Thomas M. Finneran

The Honorable William P. Nagle, Jr.

Secretary Charles D. Baker

Members of the General Court

Omnibus ad quos praesentes literae pervenerint, salutem.

I am today releasing a report concerning the management of a school renovation project in Needham. This report discusses the problems that contributed to excess costs and schedule delays on the Pollard Middle School project, provides a detailed history of two large construction change orders on the project, and offers a series of recommendations for safeguarding future projects from waste and delays.

The problems encountered on the Pollard School project illustrate some of the risks of devoting inadequate resources to oversight of complex, multimillion-dollar municipal construction projects. It is my hope that this report will serve to focus attention on the importance of investing in management safeguards and full-time, professional project management for such projects.



I appreciate the cooperation provided to my Office by the town of Needham and the project designer. A draft of this report was provided to the Superintendent of the Needham School Department and to the Chairman of the Needham School Committee. Their written responses are included as an appendix to this report.

Sincerely,

A handwritten signature in black ink, reading "Robert A. Cerasoli". The signature is fluid and cursive, with a small dot at the end of the last word.

Robert A. Cerasoli
Inspector General



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EXECUTIVE SUMMARY

In 1990 the town of Needham commissioned a feasibility study that set forth three alternate schemes for expanding the Pollard Middle School. The Needham School Committee selected and scaled back a design calling for the construction of a two-story classroom addition and renovations to the existing building. The estimated cost of the project -- including design and construction services, building furnishings, clerk of the works expenses, and a five percent contingency -- was approximately \$6 million. As of early 1995, the town had spent more than \$7.3 million on the project, and additional expenditures for remedial work on the building were anticipated.

In August 1994, the Office of the Inspector General ("the Office") received several complaints alleging that mismanagement of the Pollard School project had contributed to cost overruns and schedule delays. In the ensuing months, Office staff reviewed hundreds of project documents and interviewed numerous project participants.

In conducting this review, the Office focused on the project management deficiencies underlying the problems the town encountered over the course of the project. The purpose of the Office's review was not to assess the quality of the design, nor to evaluate the construction contractor's performance, nor to conduct a detailed financial audit of the project, nor to assign blame to specific individuals. Rather, the Office's intent was to examine how some problems might have been prevented and how future municipal construction and renovation efforts can be better managed and controlled.

The first section of this report discusses the management deficiencies contributing to excess costs and schedule delays on the Pollard School project. The Office's findings concern four key areas of project management: planning, fiscal control, schedule control, and contractor oversight. The second section of the report provides a detailed history of two large construction contract change orders on the project.

The Office's findings, summarized below, highlight the need for effective project management safeguards on public projects at all stages of design and construction.

Project Management Findings

I. PLANNING

- Finding 1. The final design for the Pollard School called for a more expensive, complex, and disruptive project than that envisioned by the town's feasibility study.
- Finding 2. The Pollard School project lacked a single manager to serve as the focal point of responsibility and accountability for the town of Needham.

II. FISCAL CONTROL

- Finding 3. Although the School Department awarded the design contract to The Office of Michael Rosenfeld (OMR) for a fixed fee of \$300,000, the cost of OMR's contract ultimately doubled.
- Finding 4. The School Department appears to have forwarded OMR's invoices to the Comptroller for payment without verifying the accuracy of the amounts billed.

- Finding 5. The School Department violated municipal procurement law by paying OMR \$32,140 for furniture that should have been procured through an advertised competition.
- Finding 6. The School Department's \$35,050 purchase of shelving for the media center violated the state's construction bid law.
- Finding 7. The town of Needham overpaid the Pollard School construction contractor, P.J. Stella, by more than \$400,000 during the first quarter of 1994.
- Finding 8. OMR did not issue a final certificate for payment to P.J. Stella.

III. SCHEDULE CONTROL

- Finding 9. OMR did not adequately monitor and control the project construction schedule.
- Finding 10. The flawed and incomplete schedule for procuring and installing windows contributed to project delays and disruption of school operations.
- Finding 11. OMR and the Building Committee approved 13 construction change orders authorizing open-ended schedule extensions by P.J. Stella.

IV. CONTRACTOR OVERSIGHT

- Finding 12. The clerk of the works function was undermined by lack of supervision, personnel turnover, and poor record-keeping.
- Finding 13. The construction administration services provided by OMR were deficient.

Examples of Inadequate Project Control

Over the course of the Pollard School project, the Pollard Building Committee approved a total of 24 construction change orders totalling \$692,742. The two change orders discussed below were among the largest executed on the project. The manner in which they were developed, approved, priced, and monitored clearly illustrates the inadequacy of the fiscal control, schedule control, and contractor oversight furnished by the School Department and OMR.

I. THE COMPUTER NETWORK CHANGE ORDER

- Finding 14. The decision to exclude the computer network from the original project design was wasteful and inefficient.
- Finding 15. The computer network installed by change order did not include the intercom system called for in the specifications prepared by the network design consultant.
- Finding 16. Administrative markups and expenses accounted for 20 percent of the \$165,570 computer network change order.
- Finding 17. The computer network change order delayed the project schedule.
- Finding 18. Improper installation of the computer network delayed completion of the work until February 1995.

II. THE KITCHEN REDESIGN CHANGE ORDER

- Finding 19. OMR was paid an additional \$8,000 to expand and relocate the kitchen during the design phase.
- Finding 20. The name-brand kitchen equipment specified in the bid documents did not comply with legal requirements.

- Finding 21. The Building Committee's decision to revise the kitchen design during the construction phase led to significant project cost increases and schedule delays.
- Finding 22. The kitchen redesign change order deleted 24 items of kitchen equipment from P.J. Stella's contract but failed to itemize the additional equipment P.J. Stella was required to provide.
- Finding 23. The Pollard School project appears to have been overcharged by more than \$8,000 for the kitchen equipment delivered under the kitchen redesign change order.

Conclusion and Recommendations

The 23 findings set forth in the preceding pages are specific to the Pollard School project, its participants, and its circumstances. Taken as a whole, however, the findings offer some lessons for effective management of municipal construction projects.

Like many Massachusetts municipalities, Needham assembled a committee of school officials and community volunteers for the purpose of overseeing the Pollard School project. The extensive time devoted to the project by the Building Committee members attests to the effort and commitment of this unpaid group. Nevertheless, the findings in this report suggest that a municipality embarking on a complex, multimillion-dollar municipal construction or renovation project has a responsibility to invest in full-time, professional project management in order to safeguard the project from excess costs, schedule delays, and design and construction problems.

In the absence of a project manager, the Building Committee relied on the project designer for policy guidance and contractor oversight as well as design expertise. The designer did not effectively manage and control the project on behalf of the town. As this case illustrates, overreliance on any private consultant or vendor is risky and can be imprudent.

The risks were compounded by procedural lapses within the Needham School Department. Without effective contracting, fiscal control, and record-keeping procedures, a municipality is vulnerable to fraud, waste, and abuse on any contract.

In the current economic and political climate, persuading taxpayers to fund extra project management staff or consultants can be difficult. The problems encountered on the Pollard School project illustrate some of the risks of devoting inadequate resources to project management and oversight functions.

The Inspector General recommends that the town of Needham implement the following management safeguards for future construction and renovation projects:

1. Assign a project manager to oversee the project from the feasibility study phase through construction completion.
2. Hire or contract with an experienced clerk of the works or resident engineer.
3. Hire or contract with a construction manager for large or complex projects.
4. Advertise for bids on a complete design that includes all work that can reasonably be anticipated.
5. Execute contract amendments to reflect any and all changes in the scope, cost, or schedule of project-related contracts.

6. Create budgetary accounts to facilitate contract monitoring and fiscal control.
7. Ensure that town procurements are legal and competitive.
8. Maintain complete, accurate project records in a central location within the town offices.



OVERVIEW

The Pollard Middle School in Needham was constructed in 1958. In 1969, a two-story wing was added with a bridge connecting the upper level to the original building. As of 1990, the Pollard School's enrollment was approximately 800 students.

In 1990 the town of Needham commissioned a feasibility study that set forth three alternate schemes for expanding the Pollard School. The Needham School Committee selected and scaled back a design scheme calling for the construction of a two-story classroom addition as well as some renovations to the existing school building. The estimated cost of the new, 10-classroom addition -- including design and construction services, building furnishings, clerk of the works expenses, and a five percent contingency -- was approximately \$6 million, of which approximately 58 percent was to be reimbursed by the state. As of early 1995, the town of Needham had spent more than \$7.3 million on the Pollard School project. Additional expenditures for remedial work on the building were anticipated.¹

The final design for the project differed significantly from that envisioned in the feasibility study. The plan to add a new wing to the existing building was scrapped; instead, the final design called for extensive renovations within the building itself to create new classroom space. (The final design also included some new construction.) This radical change in the nature of the project increased the project cost, delayed the project schedule, and disrupted school operations.

¹ The Pollard School Committee commissioned an independent design review of the heating, ventilation, and air conditioning system at the Pollard School in early 1995. The design review consultant's report, issued in April 1995, identified a series of design problems and installation errors, and estimated the cost of improvements at \$279,300.

The following chronology shows the sequence of events from May 1991, when the town voted to fund design of the Pollard School project, to November 1992, when the construction contract was signed:

- May 1991: Needham Town Meeting voted to appropriate \$300,000 for project design services.
- November 1991: The Needham School Committee executed a \$300,000 design contract with the architectural firm of The Office of Michael Rosenfeld (OMR).
- May 1992: Needham Town Meeting voted to appropriate \$6,995,000 for the Pollard School project.
- June 1992: The town of Needham submitted the final project design and application forms to the School Facilities and Management Services Bureau of the Massachusetts Department of Education for funding under the School Building Assistance Act (Chapter 645 of the Acts of 1948, as amended).
- September 1992: The Needham School Committee advertised for construction bids.
- November 1992: Needham voters voted to exclude the project appropriation from the debt restrictions of Proposition 2½.
- November 1992: The Needham School Committee executed a \$5,516,244 construction contract with the lowest qualified bidder, P.J. Stella, Inc. The contract called for substantial completion of the construction work by March 15, 1994.

The project reached substantial completion on October 31, 1994. As of January 1995, OMR's \$300,000 design contract had increased to \$599,500. P.J. Stella's \$5.5 million contract had increased to \$6.5 million.

In August 1994, the Office of the Inspector General ("the Office") received several complaints alleging that mismanagement of the Pollard School project had contributed to cost overruns and schedule delays. In the ensuing months, Office

staff reviewed hundreds of project documents on file at the Needham School Department and at OMR's office, including project-related studies, contracts, specifications, plans, drawings, invoices, construction change orders, correspondence, meeting minutes, and computer printouts. The Office interviewed representatives of the Pollard Building Committee, the School Department, and the Comptroller's office. The Office also conducted numerous lengthy interviews with the project manager assigned by OMR to the Pollard School project. The Inspector General appreciates the extensive assistance and unfailing cooperation provided to the Office by the town of Needham and by OMR.

The Office found no evidence of criminal wrongdoing on this project. All participants appear to have acted in good faith. However, the progress of the Office's review was hampered by the absence of detailed project records or documents pertaining to key areas of inquiry. For example, the project files maintained by the School Department contained no comprehensive summaries or analyses of project expenditures over the life of the project. The Town Comptroller provided the Office with several computer printouts, one of which was retrieved from storage, showing payments made by the town from the account containing the bond proceeds for the Pollard School project. However, these printouts contained no detail on the nature or purpose of each expenditure, nor did they tie each expenditure to a specific contract. Thus, while the Office was able to estimate current project expenditures, the Office was unable to reconstruct a detailed financial history of the project.

In addition, the Office discovered that six months of construction meeting records had been lost or mislaid. Construction meetings were typically attended by representatives of OMR, the contractor (P.J. Stella Construction Corporation), and the clerk of the works, and sometimes by representatives of the School Department and various subcontractors. The minutes from these construction

meetings, recorded by OMR, often constituted the only detailed documentation of the progress of construction, problems encountered on the project, and instructions given to the contractor and his subcontractors. Neither the School Department nor OMR was able to locate copies of minutes from construction meetings that reportedly took place between January 11, 1994, and June 28, 1994.

Finally, some key project documents assembled by the first clerk of the works were lost or mislaid. At the outset of this review, the Office requested access to the shop drawings, marked-up construction drawings, delivery tickets, and other site records maintained by the person who served as project clerk of the works from December 1992 until April 1994.² Although OMR files contained the daily logs maintained by the clerk, the other records were unavailable.

In conducting this review, the Office focused on the project management deficiencies underlying the problems the town encountered over the course of the project. The purpose of the Office's review was not to assess the quality of the design, nor to evaluate the construction contractor's performance, nor to conduct a detailed financial audit of the project, nor to assign blame to specific individuals. Rather, the Office's intent was to examine the question of how some problems might have been prevented and how future municipal construction and renovation efforts can be better managed and controlled.

² Three individuals in succession served as clerk of the works for the Pollard School renovation project.

The first section of this report discusses the management deficiencies contributing to excess costs and schedule delays on the Pollard School project. The Office's findings concern four key areas of project management:

- I. Planning**
- II. Fiscal Control**
- III. Schedule Control**
- IV. Contractor Oversight.**

The second section of the report provides a detailed history of two large construction contract change orders on the Pollard School project. The Office's findings highlight the need for effective project management safeguards on public projects at all stages of design and construction.

PROJECT MANAGEMENT FINDINGS

I. PLANNING

Although the town of Needham had undertaken a careful planning process prior to embarking on the Pollard School project, two major issues affecting the success of the project were accorded insufficient attention by the town and its designer.

Finding 1.

The final design for the Pollard School called for a more expensive, complex, and disruptive project than that envisioned by the town's feasibility study.

The 1990 feasibility study commissioned by the town of Needham recommended improvements to Needham's five elementary schools, the Pollard Middle School, the Newman Middle School, and the School Department administration building. The study set forth three alternate schemes for creating new classroom space at the Pollard School. All three schemes called for the construction of a new wing to the Pollard School containing 22 new classrooms as well as various renovations to the existing school building. Construction cost estimates for the alternate schemes ranged from \$5,731,000 to \$8,353,000; total project cost estimates ranged from \$6,977,000 to \$9,978,000.

In January 1991 the town's Feasibility Study Subcommittee, which was charged with overseeing the feasibility study, issued a summary report recommending that the Needham School Committee accept the so-called "basic scope" study scheme for the Pollard School. The estimated construction cost was \$8,013,000 and the estimated total project cost was \$9,589,000. By mid-1991 the Pollard

Building Committee, which was charged with overseeing the expansion of the Pollard School, had reduced the number of classrooms planned for the new wing and scaled back the estimated project cost to \$6,029,000 million.³

The project designer, the Office of Michael Rosenfeld (OMR), began work in November 1991. The following month, OMR presented six site scheme summaries to the Building Committee. The site scheme selected by the Building Committee differed markedly from the "basic scope" study scheme that had served as the basis for the project cost estimates to date: the ratio of renovation work to new construction had increased significantly. The new addition to the Pollard School had been scrapped. Instead, extensive renovations were planned to the existing building to create the new classrooms in existing space and build a small amount of new space.

The final design for the Pollard School moved the existing media center to the front of the school and converted the vacated space into classroom space. It also moved the school cafeteria to a lower floor, moved the shop and art room into the old cafeteria, and converted the shop and art room into classrooms. Instead of a construction project involving a limited amount of renovation work, the final design produced a renovation project involving a limited amount of new construction.

This radical change in the nature of the project had far-reaching consequences for the project cost, schedule, and impact on school operations. While costs for

³ According to the former Chairman of the Building Committee, new enrollment figures indicated lower enrollments than those projected in the feasibility study. Accordingly, the Building Committee reduced the square footage in the "basic scope" design scheme from 31,000 to 25,000 and lowered the estimated construction cost.

new construction tend to be relatively predictable, costs for renovation work are often much more difficult to forecast. The ease or difficulty of major work items cannot be assessed until walls are torn down and ceilings removed. Unforeseen problems can wreak havoc with budgets and schedules. In the case of the Pollard School, the risks of embarking on a complex renovation project were heightened considerably by the fact that the work was to proceed while school was in session.

The project was thus a complex undertaking that required close coordination and detailed schedules for each phase of construction. According to the Building Committee meeting minutes, OMR cited the disadvantages of renovating a functioning school building; however, the Building Committee did not regard this issue as a major impediment.

Finding 2.

***The Pollard School project
lacked a single manager to serve as the
focal point of responsibility and accountability
for the town of Needham.***

The town of Needham had devoted considerable effort to developing a comprehensive educational program for Needham schools, commissioning an extensive feasibility study based on the educational program, and preparing a detailed project budget for the Pollard School project. The issue of how and by whom this complex undertaking would be managed merited at least as much attention as the program, study, and budget for the project.

The School Committee had contractual responsibility for the Pollard School project. Project direction and guidance was to be provided by the Pollard

Building Committee, a special volunteer committee comprised of representatives from the School Committee, the School Department, the Pollard School, and the community. Management of project business, such as processing payments for the designer and the contractor, was to be handled by the business manager's office within the School Department. Invoices from the designer and the contractor were eventually paid by the Needham Comptroller's office.

The Building Committee was chaired by the School Department's business manager until November 1991, when he resigned to accept a position in another municipality. (The business manager left his position shortly after the School Committee signed the design contract with OMR.) A new business manager was hired in March 1992 and remained in the position until September 1993. Although he was responsible for processing payments to the designer and the contractor, he did not chair or participate in the Building Committee during his 18-month tenure as business manager. The Pollard Middle School Principal chaired the Building Committee from mid-1992 until mid-1994, when the Superintendent of Schools assumed this responsibility. The former business manager returned to the School Department with the title of Assistant Superintendent for Administration and Finance. His office continued to process payments to the designer and the contractor.

Although the Building Committee met regularly to discuss the progress of the Pollard School project, the Building Committee did not approve project payments to OMR or to P.J. Stella, the construction contractor. The business manager, who processed all project payments, did not participate in the Building Committee. At no time was one person responsible for managing and monitoring the project on behalf of the town. The available evidence, discussed in the following pages, suggests that inadequate project oversight by both the town and its designer was a key factor leading to project cost increases and schedule delays.

II. FISCAL CONTROL

Fiscal controls over the Pollard School project were uniformly weak. Neither the town nor OMR systematically analyzed, monitored, or documented the financial status of the project until the project was nearing completion in September 1994.

Finding 3.

Although the School Department awarded the design contract to OMR for a fixed fee of \$300,000, the cost of OMR's contract ultimately doubled.

As of early 1995, the cost of OMR's contract was \$599,500⁴ -- nearly twice the size of OMR's initial \$300,000 design contract. The School Committee had executed two contract amendments increasing the cost of OMR's contract by \$142,000. The remaining fees to OMR of \$157,500 were not authorized or reflected in contract amendments.

The additional OMR fees beyond the initial \$300,000 design fee fall into four general categories:

1. fees for construction administration services excluded from the initial design contract;
2. fees for expansion of the project scope during the design phase;
3. fees and expenses for a clerk of the works; and

⁴ As of early 1995, the School Department had paid all but \$12,500 of the \$599,500 owed to OMR. According to School Department officials, an additional invoice for \$186,000 submitted by OMR was referred to Needham's Town Counsel.

4. fees and expenses for change orders, subconsultants, and equipment purchases during the construction phase.

The \$300,000 design fee established by the School Committee was unusually low by industry standards. The School Committee advertised for proposals for architectural services for the Pollard School project at a fixed fee of \$300,000. The request for proposals (RFP) referred prospective designers to the completed feasibility study and advised them that the project would be based upon the "basic scope" study scheme. The "basic scope" scheme called for a mix of new construction and renovation work at an estimated construction cost of \$8,013,000 and an estimated total project cost of \$9,589,000. The feasibility study estimated the architectural and engineering fees at \$721,170 -- nine percent of the estimated construction cost. By contrast, the \$300,000 fee established by the School Committee amounted to only 3.7 percent of the estimated construction cost for the "basic scope" scheme.

By the time the design contract was awarded to OMR, the Building Committee had scaled back the estimated project cost to \$6,029,000. According to project records, the construction cost estimate for the scaled-back addition was \$5,174,900. Calculated at nine percent, design fees would have amounted to \$465,741.

The state Designer Selection Board, which selects designers for state building projects, uses the estimated construction cost of the project and the building type to determine a reasonable design fee for the project.⁵ As discussed in the previous Finding 1, the final design for the Pollard School project called for a complex renovation project along with some new construction work. If OMR's

⁵ Under the state's designer law, design contracts may not express design fees as a percentage of construction costs; design fees must be stated as a fixed dollar amount. (M.G.L. c.7, §38G(c).)

design fee had been determined using the fee schedule developed by the Designer Selection Board, the design fee would have been approximately \$440,000 -- well above the \$300,000 fee negotiated with OMR.

The RFP contained contradictory information regarding the design services to be provided for the \$300,000 fixed fee. While the RFP cited the language of the \$300,000 budget appropriation for design services through construction bidding, the RFP also indicated that the \$300,000 fee would include post-bidding construction administration services. Nevertheless, 27 design firms responded to the RFP despite the low fee and potential confusion over the services included in that fee. The Building Committee selected six design firms to interview further, and then ranked the top three. According to Building Committee members interviewed by the Office of the Inspector General, the applicants were told that the \$300,000 fee would not include construction administration.

The Building Committee was unable to negotiate a contract with the top-ranked firm, which requested a fee of \$545,000 for design services through the bidding phase. However, OMR -- the second-ranked firm -- agreed to the \$300,000 fixed fee. In the ensuing months, OMR would repeatedly cite the low initial design fee as justification for design fee increases.

OMR received additional fees of \$100,000 for construction administration services. Early in the planning phase of the project, the decision was made to exclude construction administration services from the initial design fee. The School Committee's design contract with OMR stated that OMR would receive up to \$100,000 in additional fees for construction administration services if the town of Needham voted to fund the Pollard School project:

The fee for the construction phase shall not exceed \$100,000.00 and shall be negotiated immediately following approval by the town of the override to fund construction of the project.

In January 1993, after the town had voted to approve the project and construction had begun, OMR submitted the first invoice for construction administration services to the School Department. The cover letter from OMR's business manager stated:

To stay within our original contract, we propose to provide these services for \$100,000 over a fifteen month construction period. . . .

The Superintendent of Schools responded with a letter pointing out that the contract language called for a fee negotiation and requesting a detailed accounting from OMR of the services to be performed.

The following month, OMR's business manager sent a second letter to the School Department noting that the construction administration services OMR was providing had been defined in the contract between the School Committee and OMR. The letter also emphasized the inadequacy of the initial \$300,000 design fee in light of the extensive renovation work called for in the final design for the Pollard School:

(O)ur engineers had urged us to ask for more than \$100,000 in this phase. Their argument was that **since we did not get an adequate fee in the first phase of the project** and the overall cost of the project is \$500,000 less than the original approved budget, you could afford to make an adjustment to our fee at least in this phase of the project. They also felt that **because of the extensive renovation work, we are going to need more than \$100,000 in fees to cover our basic services.** However, we felt that you would not be agreeable to this request and only asked for \$100,000. (Emphasis added.)

In May 1993 -- six months after signing the construction contract -- the School Committee executed an addendum to its contract with OMR authorizing payment to OMR of the full \$100,000 for construction administration services over a 15-month construction period.

OMR received additional fees of \$42,000 for increases in the project scope during the design phase. OMR's November 1991 contract contained a table of projected project costs showing the line-item breakdown of the \$6,029,000 cost estimate for the Pollard School. The contract explicitly prohibited increases in the design fee based upon changes in the line items or their monetary values. Section 3.1.3 of the contract stated:

The Projected Costs table attached hereto as "C" is to be used for reference only both as to the specific project items listed, as well as the monetary values assigned to each. **Actual costs and project items which differ from the Projected Costs table shall not be used to either increase or decrease the Architect's fee which is a stipulated lump sum of \$300,000 (prior to Construction Administration).** (Emphasis added.)

Within two months, the base budget estimate for the project had increased by \$500,000. The minutes prepared by OMR for the February 5, 1992, meeting of the Building Committee contained the following explanation:

The proposed base budget adds \$500,000 to the original \$6,027,000. This increase is primarily due to code requirements.

OMR requested a \$50,000 fee increase in March 1992. Of the requested amount, OMR identified \$22,000 as code-related; the remaining \$28,000 was to cover lighting expenditures, plumbing and heating-ventilation-air conditioning (HVAC) upgrades, door hardware for handicapped use, an enlarged kitchen/cafeteria, and an allowance for a computer network (discussed in greater detail later in this report). In a letter to the School Department, OMR ascribed the project cost increases to "circumstances outside our control."

In an April 1992 letter to Needham's Town Counsel, OMR cited the low fixed fee of \$300,000 for design services as further justification for the requested fee increase:

The lump sum architectural and engineering fees associated with this work had been fixed at \$300,000 through bid and negotiation services. **Since this fee was fixed and was extremely low (probably the lowest in recent years in the State of Massachusetts for this kind of work)** and because the scope of the renovation and the size of new construction could have varied, we agreed to sign a contract for this fee, but limited the scope of our work to Pollard's Middle School "Projected Cost" with a total budget of \$6,029,000 and construction cost of \$5,170,000, plus \$517,000 in design contingency for potential increase in scope or cost. . . . As the plans for the proposed addition and renovation were developed and our mechanical and electrical engineers investigated the building and discussed their findings with Pollard's Building Committee and the Town's building officials, it became clear that the original scope of work and the project budget had to be increased. (Emphasis added.)

Town Counsel disagreed with OMR's reasoning. In a letter to OMR dated April 29, 1992, Town Counsel wrote:

This project was advertised as a lump sum fee agreement . . . with an established maximum of \$300,000. **Section 3.1.3 was inserted to emphasize the lump sum nature of this agreement under state law in light of your express concern at that time that the fee was too low.** . . . I will not advise the School Department to now ignore that language.

I understand your contention that because of the size and condition of the Pollard School building the scope of your work could have varied greatly. But frankly, in my view, **that is the risk architects assume when they agree to do a public project under the lump sum provisions of the Designer Selection statute.** It is also my view that the architect is charged with the responsibility of knowing what work will be required by the various "codes" which govern the project. . . . Unless a code has changed since the Agreement was executed in November, 1991, there is no basis for additional architect's fees because you have now discovered that the existing codes will require increases in the anticipated construction budget. (Emphasis added.)

On May 4, 1992, Needham Town Meeting voted to raise and appropriate \$6,995,000 for the renovation of the Pollard School building. In explanatory

materials provided to Town Meeting members, the Building Committee acknowledged that the original estimate of \$6,029,000 had increased and listed the items responsible for the cost increase.⁶ Among these were new computer/video network system budgeted at \$66,000 and a replacement kitchen budgeted at \$45,650. Together, these two items would eventually cost the project more than twice the budgeted amounts. (The computer network and kitchen redesign change orders to the construction contract are discussed later in this report.)

In a subsequent letter dated June 30, 1992, Town Counsel advised OMR that the Building Committee had agreed to authorize design fee increases for four of the eight items for which OMR was requesting fee increases, and that the remaining code-related items concerned work that was contemplated as part of the original scope of the contract.

However, the debate over design fees continued. OMR wrote to the School Department in July, again citing the changed scope and size of the renovation project and the low lump-sum design fee. In August 1992 Town Counsel wrote another lengthy letter to the Building Committee setting forth the basis for denying \$24,000 of the requested fee increase.⁷

⁶ Although OMR's initial \$300,000 design fee had been included in the original \$6,029,000 budget estimate, this amount was not included in the new \$6,995,000 budget estimate. Thus, the explanatory materials understated the project cost increase by \$300,000.

⁷ The letter also noted that OMR was requesting \$8,000 to pay a kitchen consultant hired by OMR without the Building Committee's advance written approval required by OMR's contract.

The matter was not resolved until February 1993. Against Town Counsel's advice, the School Committee executed an addendum to OMR's contract authorizing fee increases of \$42,000 to cover all but one of the items requested by OMR.⁸

OMR received additional payments totalling \$84,486 for the clerk of the works.

The \$6,995,000 project budget approved at the May 1992 Town Meeting allocated \$95,000 for a clerk of the works. As of early 1995, clerk of the works expenditures on the project totalled approximately \$101,000. The clerk of the works was paid by OMR, which then billed the School Department for this expense, from December 1992 to April 1994. In subsequent months, the clerk of the works was paid directly by the School Department. (The clerk of the works function is discussed in greater detail later in this report.)

Of the \$84,486 paid to OMR, approximately \$72,000 represented the clerk's salary over 17 months. The remaining \$12,000 consisted of OMR's administrative fees, workers' compensation insurance for the clerk, and reimbursable expenses. OMR's contract was not amended to authorize or reflect the fees billed for the clerk of the works.

OMR received additional payments of \$63,000 for change order work, fees to subconsultants, and equipment purchases during the construction phase. The School Committee's contract with OMR was not amended to authorize or reflect any of these additional payments, nor do the project records contain formal written authorization for these payments. According to the School Department's Assistant Superintendent for Finance and Administration, any fee increases to OMR not reflected in OMR's contract should have received formal approval by

⁸ Although the addendum did not include OMR's requested \$8,000 allowance for reimbursable consultant expenses in connection with the new computer network, the School Department later paid OMR \$8,857 in additional fees in connection with the computer network.

vote of the Building Committee. OMR's project manager,⁹ who attended all Building Committee meetings, told the Office that the Building Committee did vote to approve the additional fees paid to OMR. However, the Building Committee meeting minutes recorded by OMR contained no information on project-related votes by the Building Committee.

Finding 4.

The School Department appears to have forwarded OMR's invoices to the Comptroller for payment without verifying the accuracy of the amounts billed.

OMR's invoices were not reviewed or approved by the Building Committee; instead, they were submitted directly to the School Department. The project records suggest that the School Department did not review the basis for the fees billed by OMR before forwarding OMR's invoices to the Needham Comptroller for payment. Many of the invoices submitted by OMR and forwarded to the Comptroller by the School Department included fees for services that had not been included in OMR's contract nor authorized in writing by the Building Committee.

During the course of this review, the Office of the Inspector General found discrepancies between the financial summaries of payments to OMR maintained by the School Department and those maintained by OMR. The Office discovered that on at least two occasions, the School Department had circled or marked the

⁹ Although the principal of OMR, a registered architect, appears to have been heavily involved in the design phase of the Pollard School renovation project, ongoing project oversight was the responsibility of another OMR staff member. This individual, who is not a registered architect, is referred to as "OMR's project manager" in this report.

wrong amount listed on OMR's invoice, and the Comptroller had paid the amount indicated. In May 1993, OMR notified the School Department that OMR had received a \$7,338 overpayment from the town; OMR then voided the check and returned it to the School Department. OMR voided and returned a second overpayment of \$5,023 in January 1994. After the School Department adjusted its records to account for the voided checks, the School Department's records comported with OMR's records.

Finding 5.

The School Department violated municipal procurement law by paying OMR \$32,140 for furniture that should have been procured through an advertised competition.

Approximately half of the \$63,000 paid to OMR in additional fees (other than clerk of the works fees) during the construction phase consisted of an illegal \$32,140 payment for chairs, tables, and other furniture for the Pollard School media center purchased by OMR from a Connecticut vendor in July and October of 1994. OMR charged the School Department a 15 percent administrative fee for this purchase: approximately \$4,000 of the \$32,140 paid to OMR.

M.G.L. c.30B, the Uniform Procurement Act, requires municipalities to seek competition for furniture purchases.¹⁰ When the cost of such purchases exceeds \$10,000, the municipality must conduct a formal, advertised, competitive process using either competitive sealed bids or competitive sealed proposals. By failing to conduct such a process, the School Department deprived qualified vendors of the opportunity to compete for the furniture contract; it also deprived the town

¹⁰ Chapter 30B applies generally to supplies and to most services other than design and construction.

of Needham of the assurance that it would obtain the needed quality of furniture at the lowest bid price.

Finding 6.

The School Department's \$35,050 purchase of shelving for the media center violated the state's construction bid law.

In December 1993, the School Department advertised in the *Needham Times* for bids on shelving for the Pollard School media center. The advertisement instructed interested vendors to obtain bid specifications from OMR and stated that bids would be submitted to and opened by OMR. The bid specifications provided quantities and detailed descriptions of five steel shelving items of different sizes, and noted:

This specification covers delivery and installation of Steel Library Shelving of the bracket type. Heights, depths and accessories shall be as indicated on the plans and/or Schedule of Equipment.

According to OMR's records, OMR received three bids from two vendors outside the *Needham Times* distribution area: one vendor in Connecticut and the other in New Hampshire. (The records indicate that OMR may have mailed copies of the bid specifications to three vendors, two of which submitted bids.) One vendor's bid totalled \$35,242.47 for the specified items; this vendor also bid \$30,567.82 on a set of alternate specifications enclosed with the bid. The other vendor, which was selected by OMR, submitted a bid of \$17,777 for a portion of

the items specified and listed additional unit prices, which were not totaled, for the remaining items.¹¹

On January 20, 1994, the selected vendor, a furniture distribution company called Equipment Environments, sent a letter to OMR stating:

This will acknowledge your verbal authorization to proceed with the purchase of steel shelving for the Pollard Media Center. It is our understanding that this total contract will be \$35,050.00 and will include the following items. . . .

The letter went on to list the quantities, descriptions, and prices of the five items to be purchased. The shelving items listed in the letter were not identical to those listed in the School Department's bid specifications. According to the vendor's letter, changes in the quantities and sizes of two types of shelving listed in the bid specifications were necessary to accommodate existing structural columns in the media center.

According to the Needham Comptroller's 1994 payment records, Equipment Environments received two payments from the town totalling \$35,050. However, project records maintained at the School Department and OMR contained no written contract with Equipment Environments for the shelving.

State bid law requirements¹² apply to contracts of \$10,000 or more for construction materials to be used on a public project such as the Pollard School project. Specifically, the School Department was required to specify the

¹¹ The bid noted: "Total tops and ends subject to clarification. No layout was provided with specs. All items subject to owner clarification and approval."

¹² Two construction bid statutes govern contracts for construction materials to be used on a public project: M.G.L. c.149 and M.G.L. c.30, §39M.

materials, advertise the library shelving bid in the *Central Register*,¹³ require a bid deposit, award a contract for the specified materials to the lowest eligible bidder, and execute a formal written contract. The School Department's \$35,050 purchase did not fulfill all of these statutory requirements.

By advertising the contract only within the town of Needham rather than statewide, the School Department deprived qualified vendors of the opportunity to bid and the town of Needham of the assurance that it would obtain the needed quality of shelving at the lowest bid price. Moreover, without a formal contract with Equipment Environments, the School Department will have little protection or recourse if problems relating to the quality or installation of the shelving arise in the future.

Finding 7.

The town of Needham overpaid the Pollard School construction contractor by more than \$400,000 during the first quarter of 1994.

The construction contractor for the Pollard School project, P.J. Stella, submitted detailed applications for payment to OMR on a monthly basis. Each application for payment contained a cover sheet summarizing the financial status of P.J. Stella's contract; attached to the cover sheet were several pages of detailed information on the amount and dollar value of each work item completed during the past month, the percentage of each work item completed over the contract period, the balance remaining to complete each work item, and the unreleased retainage for each work item.

¹³ The *Central Register*, a publication of the Commonwealth's Secretary of State, is relied on by many contractors interested in competing for public contracts.

OMR signed P.J. Stella's applications for payment prior to forwarding them to the School Department. The School Department -- which did not sign the applications for payment¹⁴ -- mailed or delivered them to the Comptroller's office, which issued checks to P.J. Stella in the amounts specified in the applications. School Department officials apparently relied on OMR's certification that the amounts billed by P.J. Stella were accurate.

The design contract between the Needham School Committee and OMR required OMR to provide "construction cost accounting services," including "evaluation of Applications for Payment and certification thereof." The significance of OMR's certification of P.J. Stella's applications for payment was defined in the construction contract between the Needham School Committee and P.J. Stella:

The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, quality of the Work is in accordance with the Contract Documents.

. . . The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified.

During the first quarter of 1994, P.J. Stella overbilled the school on three successive applications for payment. OMR certified all three applications for payment and forwarded them to the School Department, which submitted them to the Comptroller's office. P.J. Stella was paid for two of the three erroneous applications for payment. The other application for payment was not paid

¹⁴ Several of P.J. Stella's applications for payment were initialed by the school business manager.

because the amount requested exceeded the entire balance of the Pollard School project account.

The chronology of the three overbillings by P.J. Stella, set forth below, illustrates the weakness of the fiscal controls over the construction contract for the Pollard School project.

Application 13, which was certified by OMR and paid by the town, overbilled the project by \$270,817.13. On January 6, 1994, P.J. Stella submitted application 13 to OMR in the amount of \$886,130.94 for work completed by December 31, 1993. This application contained a major error on the cover sheet: it erroneously reported the "amount previously certified" -- i.e., paid by the School Department - as \$4,555,402.85. This figure was identical to the amount shown in application 12 (for work completed in November 1993). Since then, however, P.J. Stella had received a payment of \$270,817.13 from the town. Although application 13 overstated the amount owed to P.J. Stella by \$270,817.13, it was signed by OMR and sent to the School Department, which forwarded it to the Town Comptroller. On January 29, 1994, P.J. Stella was paid \$886,130.94, although the amount due was \$615,313.81.

In an interview with the Office, OMR's project manager stated that he was unaware of the town's payment schedule and therefore could not have known when or how much P.J. Stella had been paid. However, the School Department's Assistant Superintendent for Finance and Administration maintained that he relied on OMR to check the accuracy of P.J. Stella's applications for payment.

Application 14, which was certified by OMR but not paid by the town, overbilled the project by \$615,313.81. On February 2, 1994, P.J. Stella submitted application 14 to OMR in the amount of \$872,975.52 for work completed by January 31, 1994. This application compounded the previous month's error on the cover sheet by

again reporting the "amount previously certified" as \$4,555,402.85. Although application 14 overstated the amount owed to P.J. Stella by \$615,313.81, it was signed by OMR and sent to the School Department, which submitted it to the Comptroller. However, P.J. Stella was not paid. According to the Comptroller, he did not pay application 14 because the amount requested by P.J. Stella -- \$872,975.52 -- exceeded the funds remaining in the account containing the remaining proceeds of the \$6,995,000 bond issue for the Pollard School project. Had the amount requested in application 14 not exceeded the remaining bond proceeds, the error might well have gone undetected.

The minutes from the Building Committee's meeting on February 15, 1994, indicate that the Committee was alerted to the error in application 14. The minutes made no reference to the previous overpayment to P.J. Stella resulting from the error in application 13:

In other business, there was an error in approving last month's requisition. The contractor changed the final draft that was prepared for signatures from what was agreed to on the pencil draft. This was not picked up by OMR. Apparently, because the general contractor had not received payment from the previous month they had added that balance to the amount due. The committee was required . . . to rescind the vote approving the payment of this requisition.¹⁵ OMR apologized to the committee for failing to pick this up. (Needham Public Schools) . . . will pursue a credit for the amount of overpayment.

Instead of pursuing a credit, however, the School Department decided to instruct P.J. Stella to adjust the next application for payment by deducting the outstanding overpayment from the amount requested for payment. Neither OMR nor the School Department requested corrected versions of applications 13 and 14 from P.J. Stella.

¹⁵ As noted earlier, the project records contained no information on Building Committee votes.

Application 15, which was certified by OMR and paid by the town, overbilled the project by \$146,527. On March 4, 1994, P.J. Stella submitted application 15 to OMR in the amount of \$285,897.97 for work completed by February 28, 1994. Although application 15 did not show or reference the previous overpayment, P.J. Stella did deduct the previous overpayment from the total payment requested.

However, application 15 contained a new error in P.J. Stella's favor: P.J. Stella billed the project for \$169,939 for work completed on storefront and curtainwall windows, though the entire project budget for this item was only \$22,352 (of which \$20,500 had already been spent). All three of these figures were listed on the same line in the financial summary attached to the application for payment. This summary also showed the source of the error: the percentage of work completed on the storefront and curtainwall windows was listed as 852 percent. The application for payment overstated the amount owed to P.J. Stella by \$146,527. OMR signed application 15 and forwarded it to the School Department, which submitted it to the Comptroller for payment.¹⁶ On March 19, 1994, P.J. Stella was paid \$285,897.97, although the amount due was only \$139,370.70.

On April 1, 1994, P.J. Stella sent a fax to OMR notifying the project manager of the overpayment:

Please be advised that in preparation of March's requisition, it was realized that there was a clerical error in February's requisition for line item #08516 resulting in an overpayment of approximately \$160,000. The revised number of 852 which should have been entered in the "This Period" column was instead errantly entered in the "% Complete to Date" column, resulting in the miscalculation. This clerical error was

¹⁶ OMR's project manager acknowledged in an interview with the Office that he had not checked the math on this application for payment to ensure its accuracy. He stated that he had assumed that the School Department would do so.

also overlooked by both your office and the Owner's representative when they processed the payment.

Please advise how you would like to handle this matter. Please also note that with the values entered for March's requisition, there is still a net overpayment of approximately \$47,000.00.¹⁷

Construction work on the Pollard School was stopped five days later.¹⁸

Application 16, which was not certified, showed a \$65,458.09 project credit. On May 2, 1994, P.J. Stella submitted application 16 to OMR showing a credit to the project of \$65,458.09 for the month of March. However, OMR did not sign this application, nor did P.J. Stella write a check for \$65,458.09 to the town.¹⁹

Applications 17 and 18, submitted by P.J. Stella for payments for the months of May and June, were not certified by OMR or paid by the town. On June 27, 1994, P.J. Stella resumed work on the Pollard School project.

¹⁷ The net overpayment was actually close to \$65,000. P.J. Stella calculated the overpayment correctly in attempting to correct the error the following month.

¹⁸ School Department officials and OMR staff assigned to the project told the Office of the Inspector General that the shutdown was prompted by health and safety concerns relating to the ongoing construction work. Project files, including the Building Committee meeting minutes, contain no documentation for the decision to stop project construction. (As noted in the overview to this report, the construction meeting minutes for the first six months of 1994 have been lost or mislaid.)

¹⁹ Recollections differ on why the School Department did not require P.J. Stella to repay the project for the \$65,000 overpayment. OMR's project manager recalled that the School Department decided to carry the credit to the following month rather than seeking payment from P.J. Stella; however, School Department officials stated that they did not recall being informed of the overpayment.

Application 19, which was certified by OMR and paid by the town, corrected the previous overpayment but misrepresented the financial status of the contract. On August 12, 1994, P.J. Stella submitted application 19 to OMR in the amount of \$187,437.28 for work completed as of July 31, 1994. Although this application listed the "amount previously certified" incorrectly and contained no reference to the previous overbillings, the Office's analysis indicates that the amount billed in application 19 was accurate. OMR signed this application and sent it to the School Department, which forwarded it to the Town Comptroller. On August 24, 1994, P.J. Stella was paid \$187,437.28.

On January 13, 1995, the town of Needham reached a settlement with P.J. Stella requiring a final payment to P.J. Stella of \$358,000. The settlement agreement released P.J. Stella from any future claims made by the town of Needham against P.J. Stella for delay and noncompletion of work items with respect to the Pollard School project. The agreement also released the town of Needham from any future claims made by P.J. Stella against the town of Needham. The final \$358,000 payment, which brought the total amount paid to P.J. Stella under the Pollard School renovation contract to \$6,543,686, included a \$23,300 change order negotiated as part of the settlement agreement.

Finding 8.

***OMR did not issue a final certificate
for payment to P.J. Stella.***

OMR's contract with the School Committee required OMR to provide a series of project closeout services, including issuance of a final certificate for payment upon completion of construction. P.J. Stella's contract with the School Committee spelled out the significance of the final certificate for payment:

Upon written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in said final Certificate for Payment is due and payable.

Nevertheless, the settlement agreement was executed and P.J. Stella was paid \$358,000 without OMR's written verification that P.J. Stella had completed the work called for in its contract.²⁰

²⁰ At least one component of P.J. Stella's contract was incomplete when the settlement agreement was executed: certification of the computer network. The computer network change order is discussed in detail later in this report.

III. SCHEDULE CONTROL

The Needham School Committee's contract with P.J. Stella called for substantial completion²¹ of the Pollard School project by March 15, 1994. The actual date of substantial completion was October 31, 1994.²² Project documents show that the critical task of monitoring and controlling the project schedule was accorded insufficient time and attention.

Finding 9.

***OMR did not adequately monitor and control
the project construction schedule.***

The original bid specifications contained strong language emphasizing the critical nature of the construction schedules for the project. For example, the section entitled "Summary of Work" stated:

Phasing: Work of this Contract requires special phasing to accommodate the needs of the Owner and to maintain the Owner's continuous occupancy of the adjacent school spaces throughout the project. . . .

²¹ The contract defined "substantial completion" as follows: "Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use."

²² A table attached to the Certificate of Substantial Completion signed by P.J. Stella, OMR, and the School Department shows that all project areas except for window treatments were substantially complete by August 27, 1994.

This section also warned prospective bidders that they would be expected to adhere strictly to all completion dates, phasing plans, and schedules in the contract documents:

Damages Due to Delay by the Contractor: Time is of the essence in this Contract. **Phasing and construction schedules and completion dates have been carefully prepared to accommodate the Owner's special needs and to allow sufficient time for moving into spaces.** Failure by the Contractor to meet completion dates included in the Owner/Contractor Agreement and phasing plans and schedules included in the Contract Documents will result in increased costs to the Owner for items such as and without limitation: accelerated move-in costs, overtime, moving and transportation costs, equivalent rental space costs, administrative costs, storage costs, and other costs which would not have been incurred if completion dates had been met by the Contractor. **Since these increased costs may be significant and incurred even for delays of only one day, the Contractor shall be fully responsible for meeting the phasing and construction schedules and completion dates and for all of the Owner's costs incurred because of the Contractor's failure to meet the schedules and completion dates.** (Emphasis added.)

This language indicated that OMR had prepared detailed phasing plans and schedules for construction. In fact, however, OMR had not done so, nor were any phasing plans or schedules included in the bid specifications distributed to prospective bidders.

On October 7, 1992 -- one month after the original bid specifications for the Pollard School project were issued -- OMR sent prospective bidders Addendum No. 1 to the bid specifications. Addendum 1 shifted the responsibility for preparing construction phasing plan and schedules from OMR to the contractor:

Phasing Schedule: Provide a detailed phasing schedule and diagram for the Owner's review and approval. Permit the Owner to occupy existing cafeteria and art spaces during mobilization, sitework, foundation construction, and ordering long lead items. Give not less than 14 days written notice to Owner before any space must be vacated by the Owner. The Owner will vacate only one wing

area of four to six classrooms at a time. Allow one week (five working days) for Owner to move out of a wing. To the greatest extent possible, schedule work in corridors during school vacations and summer when school is not in session. To the greatest extent possible, schedule work on heating system and windows during months from early May to late September.

An independent architectural review commissioned by the School Department in 1994 criticized the latitude the amended bid specifications gave to the construction contractor. In a letter to the School Department dated May 31, 1994, a principal of Peterson/Griffin Architects, Ltd., wrote:

The overall scope of the work undertaken at the Pollard Middle School could certainly be described as aggressive, considering the school was intended to be occupied during construction. The scope impacts the entire building and virtually leaves no area untouched by construction. Plans reveal that in excess of 80% (of the) building envelope was to be affected (including) all windows and the roof. HVAC plans detail an entire new distribution system throughout the facility and the abandonment of the old steam system. . . .

Given both the value of the work (and) the known disruption the work would cause to the existing facility(,) strong consideration should have been given to alternate plans that would have closed the school for a period of time and allow the most disruptive elements of the construction process to take place. **Even the most aggressive plan minimally should have had a detailed phasing plan and scheme that was made part of the contractor's responsibility.** . . .

(G)iven the complexity of the project(,) **the contractor was allowed . . . a great deal of latitude with regard to work sequences and procedure.** (Emphasis added.)

OMR's project files contain few schedule-related documents from the past two years. In November 1992, after the School Committee had executed a construction contract with P.J. Stella, P.J. Stella prepared an initial five-week project schedule by task and a computerized critical path diagram. A notation on the critical path diagram indicated that it was updated only once: in December 1992. In an interview with the Office, OMR's project manager recalled

that P.J. Stella updated the critical path diagram periodically over the course of construction. OMR's files contained no critical path diagrams for the project other than the version updated in December 1992, at the very beginning of the construction period.

OMR's files contained several partial schedules prepared by P.J. Stella. The files contained no written schedule updates, nor any other evidence that OMR or P.J. Stella attempted to coordinate the Pollard school schedule with the project construction schedule. Neither OMR nor P.J. Stella documented the cost drawdown schedule, which would have given the Comptroller a tool for planning the release of project funds.

Finding 10.

***The flawed and incomplete schedule for procuring
and installing windows contributed to project delays
and disruption of school operations.***

P.J. Stella's initial project schedule and diagram showed that the task of ordering windows for the Pollard School classrooms was on the critical path: i.e., this task had to be completed on time in order for the entire project to be completed on time. This task required P.J. Stella to submit shop drawings (prepared by the window subcontractor) to OMR for review and approval, return the approved shop drawings to the window subcontractor, and purchase the windows.

P.J. Stella's December 1992 schedule and diagram gave P.J. Stella until May 1993 -- more than four months -- to order the windows. However, the same schedule budgeted only 25 days for the window subcontractor to manufacture and ship the windows to the project. P.J. Stella had to begin installing the windows in

June 1993 in order to finish this task by the start of the school year in September 1993. By allowing less than one month for the manufacturing and shipping process, P.J. Stella's flawed schedule left the project with no time margin in case of manufacturing problems or shipping delays.

OMR approved the shop drawings for the windows on May 28, 1993. By then, it was clear that the windows would not be fabricated and delivered by June. Project records indicate that OMR expected the windows to be installed in August. However, the windows were not delivered to the project until December 1993. As a consequence, construction work scheduled for the summer months had to be completed during the school year. In addition to delaying the project completion schedule, the late window delivery required installation of the windows during the winter months, a construction activity that significantly disrupted school operations.

Finding 11.

***OMR and the Building Committee approved
13 construction change orders authorizing
open-ended schedule extensions by P.J. Stella.***

P.J. Stella's construction contract was amended by 24 change orders during the construction phase of the Pollard School project. The change orders increased the value of P.J. Stella's contract by \$692,742.²³ Each change order was signed by OMR's project manager and the Chairman of the Building Committee.

²³ Although the change orders were numbered from 1 to 25, change order 22 was never executed. Change order 25, which totalled \$23,300, was included in the \$358,000 settlement payment to P.J. Stella. The \$692,742 change order total includes change order 25 but not the remainder of the settlement payment.

A change order is an amendment to the construction contract that alters one or more items specified in the original contract documents, such as construction materials, method, or equipment; the services provided by the contractor, subcontractors, or suppliers; and the schedule for substantial completion of the contract. A change order may have no effect on the contract cost, increase the contract cost, or decrease the contract cost through a credit from the contractor. Similarly, a change order may have no effect on the contract schedule, extend the schedule to a later completion date, or accelerate the schedule to an earlier completion date.

The standard change order form used on the project contained two schedule-related items to be filled in prior to execution of the change order. The first item stated: "The Contract Time will be (increased) (decreased) (unchanged) by () days." The second item left a blank space for the revised date of substantial completion of the contract.

Each change order listed the dollar amount of the change order and indicated the work to be performed under the change order.²⁴ Seven of the 24 change orders stated that the contract schedule would be unchanged. Three change orders provided no indication as to whether the contract schedule would be increased, decreased, or unchanged as a result of the change order work, nor did they indicate a new completion date. One change order listed a new completion date for the contract.

All of the remaining 13 change orders indicated that the project schedule would increase but failed to list the number of days of the increase or the new contract

²⁴ The descriptions of the change order work to be performed were sometimes cryptic or incomplete. Examples of this problem are provided in the sections of this report on the computer network change order and the kitchen redesign change order.

completion date. All but two contained notations referencing letters from P.J. Stella to OMR.

For example, change orders 7, 8, 10, 11, 12, 13, and 14 contained the following notation: "See attached letter dated 8/2/93." In this letter, P.J. Stella informed OMR that P.J. Stella's rights to increase the project schedule were "fully reserved":

As we have previously advised you, the work involved in these changes has had, and will continue to have, a significant effect to (*sic*) our progress schedules and overall completion of the project.

As soon as we receive returned, fully executed copies of the change orders . . . we will then confirm expected delivery and installation dates from our respective subcontractors and revise our progress schedules accordingly. . . .

Be advised that these change orders are being processed by us with the clear understanding that our rights are fully reserved to pursue all necessary time extensions and associated costs to be incurred by us.

A second letter to OMR from P.J. Stella, dated October 26, 1993, referred to change orders 15, 16, and 17. Like P.J. Stella's previous letter, this letter stated that P.J. Stella had the right to pursue time extensions in conjunction with these change orders. A third letter from P.J. Stella to OMR, dated December 10, 1993, contained identical language regarding change order 18.

The open-ended schedules authorized by 13 of the 24 change orders reflected OMR's failure to exercise adequate schedule control over the project. OMR should have negotiated a firm schedule with P.J. Stella for each change order before the change order was signed and executed. OMR should not have approved those change orders containing references to P.J. Stella's letters. By approving 13 change orders authorizing open-ended schedule extensions, OMR and the Building Committee sacrificed the town's ability to hold P.J. Stella accountable for the project schedule.

IV. CONTRACTOR OVERSIGHT

Effective oversight of the construction contractor is key to ensuring sound fiscal and schedule control of a public construction project. In the case of the Pollard School project, neither the town nor OMR provided this essential oversight.

Finding 12.

***The clerk of the works function was undermined
by lack of supervision, personnel turnover,
and poor record-keeping.***

A clerk of the works typically serves as an important safeguard on a construction project, providing on-site inspection of the contractor's work on behalf of the owner. However, the first clerk of the works for the Pollard School project did not work for or report to the School Committee or the School Department. Instead, the clerk of the works was hired and paid by OMR -- an arrangement that proved confusing, needlessly expensive, and ultimately ineffective.

According to the Building Committee minutes prepared by OMR for the meeting held on November 17, 1992, OMR had advised the Committee that the project would be better served if OMR managed the clerk of the works:

There was considerable discussion as to who should hire the clerk. OMR recommend(ed) that the clerk work for the owner but through the architect's office. This way the architect would be responsible for managing the clerk's time and duties. We feel this works particularly well given the fact that the owner generally has neither the time (n)or the expertise to manage this position. There was some uncertainty from some members of the committee but, it was agreed to proceed with this arrangement.

OMR recruited and hired a clerk of the works who began work in December 1992 and left the project in April 1994.²⁵ The town of Needham paid OMR more than \$84,000 for the clerk of the works' salary and OMR's administrative expenses during the clerk's 17-month tenure. However, the contract between the School Committee and OMR was never amended to authorize or reflect these payments.

The project records show that the clerk of the works was to report to OMR. In a letter to the School Department dated February 15, 1992, OMR's business manager wrote:

I believe the Building Committee has approved that we hire (the clerk of the works) **to work for us on a contract basis** with a yearly salary of \$49,400.00, and will charge the Town of Needham: his salary, a 10% markup for our administrative expenses, his Worker's Compensation Insurance covered by our office, and his project related reimbursable expenses. . . . I have enclosed . . . our contract with him, and his job description for your review and file. . . . (Emphasis added.)

OMR's contract with the clerk of the works referred to the clerk as the "Architect's Project Representative." Similarly, the job description attached to the letter consisted of a standard job description, drawn up by the American Institute of Architects, entitled "Duties, Responsibilities and Limitations of Authority of the Architect's Project Representative."

OMR did not actively supervise the clerk of the works during the clerk's 17-month tenure on the project. In an interview with the Office, OMR's project manager stated that OMR's responsibilities were limited to paying the invoices submitted by the clerk of the works and billing the School Department for the clerk's salary,

²⁵ Three individuals in succession served as clerk of the works for the Pollard School renovation project. The second and third clerks of the works were paid directly by the School Department rather than through OMR.

workers' compensation insurance coverage, reimbursable expenses, and OMR's administrative fee. OMR also kept the clerk's daily project logs and timesheets. In the view of the OMR's project manager, the clerk of the works reported to the School Department. Although OMR had originally advised the Building Committee that "the architect would be responsible for managing the clerk's time and duties," it appears that OMR did not assume this responsibility. Since there was no written agreement between OMR and the School Committee regarding supervision and oversight of the clerk of the works, OMR had no contractual obligation to perform these functions.

The first clerk of the works apparently carried out his work without direct oversight by either OMR or the School Committee. He kept track of his own hours spent at the site and was paid for the number of hours he reported. In several cases, the clerk was paid more than \$2,000 per week. At his pay rate of approximately \$25 per hour, these payments reflected 80-hour work weeks. Since the clerk was not supervised, it is impossible to determine whether these and other payments were justified.

The second and third clerks hired by the town were unable to perform their assigned duties. The second clerk of the works, who began work on July 5, 1994, was hired directly by the School Department.²⁶ Because she was unavailable until after 4 p.m., she was unable to maintain a presence at the school while construction was ongoing. The minutes of the construction meeting held on July 5, 1994, contained a succinct reference to the ineffective and unworkable nature of this arrangement. Concern over the clerk's schedule was expressed, not by OMR, but by P.J. Stella, the construction contractor:

²⁶ The Building Committee had originally recommended that OMR hire this individual at the outset of construction; however, she and OMR failed to reach agreement on a salary package.

Contractor advised that clerk is not present on the job till after close of work each day. There is no owner's rep on site to verify work completed.

This second clerk left the position on July 15, 1994. She was paid a total of \$880.

The third clerk of the works, who began work for the School Department on July 12, 1994, was on site full time during the day; however, he was not provided with the project records maintained by the previous clerks of the works, such as daily logs, an updated set of construction plans, a complete set of supplemental sketches, or a complete set of shop drawings. (As noted earlier in this report, most of the records kept by the first clerk of the works were lost or mislaid after he left the project in April 1994.) In an interview with the Office, the third clerk of the works stated that because he had not been given these documents and because of extraordinary pressure to open the school the following month, he was unable to conduct construction inspections or maintain a daily log -- both essential duties of a clerk of the works. The third clerk of the works left the project on October 29, 1994. He was paid a total of \$15,829.

Finding 13.

The construction administration services provided by OMR were deficient.

OMR was paid an additional \$100,000, under an addendum to the original design contract, to provide construction administration services. The contract between the School Committee and OMR contained a detailed list of the construction administration services to be provided. OMR did not adequately perform some services set forth in the contract. Three examples are cited below.

OMR did not prepare revised construction drawings or specifications to accompany construction change orders. OMR's contract required OMR to provide:

H. Quotation Requests/Change Orders services consisting of:

1. preparation, reproduction and distribution of Drawings and Specifications to describe Work to be added, deleted or modified

The project files contain no revised drawings or specifications prepared by OMR in connection with construction change orders. In an interview with the Office of the Inspector General, OMR's project manager acknowledged that OMR had not prepared change order drawings. Instead, OMR prepared supplemental sketches that were never incorporated into the construction drawings.

In addition to being inconsistent with the contract requirements, OMR's failure to revise the construction drawings and specifications was detrimental to the project in several respects. Contractually, P.J. Stella could not be required to perform any work not reflected in the construction drawings and specifications that constituted P.J. Stella's contract with the School Committee. By providing P.J. Stella with supplemental sketches that were not incorporated into P.J. Stella's contract, OMR exposed the School Committee to legal disputes over the change order work performed by P.J. Stella.

Moreover, OMR's approach needlessly increased the difficulty of P.J. Stella's work and, thus, increased the likelihood of error. On a visit to the Pollard School during the final stages of construction, Office staff observed that P.J. Stella's foreman had pasted OMR's sketches into the official construction drawings in a makeshift effort to ensure that the drawings reflected revisions authorized by change order.

Finally, OMR's failure to revise the construction drawings and specifications rendered the task of overseeing the contractor's performance near-impossible. On the site visit referenced above, Office staff observed that the clerk of the works did not have a complete set of supplemental sketches, nor could he readily determine which portions of the construction drawings had been superseded by OMR's sketches.

OMR did not effectively monitor and report on construction schedules. OMR's contract required OMR to provide:

- I. Project Schedule Monitoring services consisting of monitoring the progress of the Contractor(s) relative to established schedules and making status reports to the Needham School Department.

As discussed in the previous section of this report, there were no "established schedules" for most of the construction period. By signing change orders authorizing open-ended schedule increases, OMR relinquished schedule control of the project to P.J. Stella.

OMR did not provide construction cost accounting services. OMR's contract required OMR to provide:

- J. Construction Cost Accounting services consisting of:
 1. maintenance of records of payments on account of Contract Sum and all changes thereto
 2. evaluation of Applications for Payment and certification thereof
 3. review and evaluation of expense data submitted by the Contractor(s) for Work performed

OMR's project records contained no summaries or analyses of contract expenditures other than those prepared by P.J. Stella in the monthly applications for payment submitted to OMR. A previous section of this report documented P.J.

Stella's overbillings to the project on three successive occasions. In an interview with the Office of the Inspector General, OMR's project manager acknowledged that he had not closely reviewed the financial information attached to P.J. Stella's applications for payment before certifying and forwarding them to the School Department.

In May 1994, more than two years into the construction period, OMR contracted with a professional construction manager for services on the Pollard School project. OMR's action was appropriate but belated. Had OMR assigned a construction manager to the project at the outset of the construction phase, many of the problems identified in these pages might have been avoided or resolved more expeditiously.

EXAMPLES OF INADEQUATE PROJECT CONTROL

The preceding sections of this report have discussed the management deficiencies that contributed to excess costs and schedule delays on the Pollard School project. This section provides a detailed chronology of two change orders executed over the course of the project: the \$165,570 computer network change order and the \$77,740 kitchen redesign change order.

Over the course of the Pollard School project, the Building Committee approved a total of 24 construction change orders totalling \$692,742.²⁷ The two change orders discussed below were among the largest executed on the project. The manner in which they were developed, approved, priced, and monitored clearly illustrates the inadequacy of the fiscal control, schedule control, and contractor oversight furnished by the School Department and OMR.

I. THE COMPUTER NETWORK CHANGE ORDER

Finding 14.

The decision to exclude the computer network from the original project design was wasteful and inefficient.

The feasibility study for the Pollard School included no provisions for installation of a computer network in the proposed two-story addition. However, project records show that the Building Committee began to plan for a computer network nine months before the project went out to bid. According to the minutes from

²⁷ Although the change orders were numbered from 1 to 25, change order 22 was never executed. Change order 25, which totalled \$23,300, was included in the \$358,000 settlement payment to P.J. Stella. The \$692,742 change order total includes change order 25 but not the remainder of the settlement payment.

the February 5, 1992, Building Committee meeting, the Director of Media Services for the School Department made a presentation to the Building Committee on this issue. OMR's minutes noted:

The Committee is meeting with IBM and Continental Cable to investigate available systems and prices. This could be treated as an option.

Within one week, according to the Building Committee minutes, the Director of Media Services had met with representatives from three computer firms. The minutes from the Building Committee's meeting on February 12, 1992, reflected the Building Committee's concern that the computer network represented an expansion of the Town-approved project scope:

The idea is to set up the networking system (running the cable) now; equipment can be purchased, incrementally, in the future. The school's currently owned computers (80+/-) could be wired to this network system, thereby linking software, video and multimedia (video and computer) access throughout the school. The system would also be linked to the intercom/clock equipment. . . . Due to public bidding rules and coordination/control issues with OMR, it is agreed that the consultant should be hired through OMR.

Because of today's economic climate, the Committee remains wary of approving this option, which after all, was not in the original scope. It can be argued that many things are very important, but still, can we afford them? However, it can also be argued in terms of educational philosophy, that such an opportunity to upgrade for the future should not be missed. The consensus is to proceed with the interviewing and hiring of a networking consultant. . . .

The Committee must deal with the fact that the \$6M town-approved budget represents a "best effort," yet somewhat arbitrary, reduction from the study estimate. It will have to explain how/why items such as code compliance, Networking and Auditorium improvements were not carried in the Town-approved scope of work.

The minutes estimated the budget for the computer network at \$40,000 to \$60,000. The minutes noted that the base project budget included \$20,000 for the

infrastructure needed to add the computer network, which would therefore require only \$20,000 to \$40,000 in unbudgeted funds. Attached to the minutes were two project cost breakdowns: a \$6,517,500 "preliminary base budget," and a \$1,275,000 "budget options" list that included \$35,000 for the computer network.

In April 1992, a project cost analysis was distributed to all Needham Town Meeting Members in anticipation of the May 4 Town Meeting. The \$6,995,000 Pollard School project budget provided to the Town Meeting Members included \$85,168 for computer cabling.

In July 1992, the town of Needham submitted the final design and funding application forms to the School Facilities and Management Services Bureau of the Massachusetts Department of Education. The town's application, completed by OMR, stated that the Pollard School project would include:

installation of a state of the art energy management system and computer system capable of being upgraded and expanded as needs and technology change.

At OMR's recommendation, the Building Committee deferred the computer network design to late 1992. The minutes from the Building Committee's meeting on July 30, 1992, indicate that OMR recommended postponing the computer network design even though the network had been included in the \$6,995,000 town-approved project budget:

(OMR's project manager) said that some items like computer technology can be postponed until after the override. If the override passes, it can be designed and bid separately and then be paid for from the project budget.

In November 1992, the town voted in favor of the override for the Pollard School project, and the final project design was put out to bid. The School Committee executed the construction contract with the lowest qualified bidder, P.J. Stella,

Inc., on November 24, 1992. The computer network was not included in the scope of P.J. Stella's \$5,516,244 contract.

This omission would have a significant impact on the project cost and schedule. Because competitive bids were not obtained on the computer network as part of the construction contract, the general contractor was paid \$165,570 for a sole-source computer network change order that did not include all of the features the Building Committee had approved. Because the computer network was not incorporated into the design of the renovations for the Pollard School, the installation of the computer network delayed other portions of the project.

On December 8, 1992, two weeks after the construction contract with P.J. Stella was executed, the Director of Media Services for the Needham schools reported to the Building Committee that she had interviewed six computer network design consultants. Her report stated, in part:

(A) proposal was requested to include a network design for computer data, voice (intercom/clock), and two-way video on the I-Loop as well as residential cable. . . .

We are recommending an intercom system with phone access, not a phone system with intercom capabilities. Therefore, the voice/intercom system will allow access to Centrex lines for distance learning. Lastly, we will consider provisioning for a backbone that can be upgraded to fiber at some future date.

The Director of Media Services recommended that the Norwood-based firm of CommuniTech be hired to design the computer network and prepare the bid specifications for a \$4,100 fee and an optional \$2,100 construction administration fee. The Director of Media Services also provided the Building Committee with a budget estimate prepared by CommuniTech for the computer network. The estimate, not including CommuniTech's design and construction administration fees, came to \$119,450.

The Building Committee meeting minutes for December 22, 1992, presented a confused picture of the budgetary implications of CommuniTech's estimate:

The committee has budgeted considerably more for this work than it will cost. Gerry (from CommuniTech) has provided the committee with a scope of work and a budget. The Committee was told that we will proceed with a base bid that includes wiring and jacks only and an add alternate for intercom and master clock hardware. At this time according to the budget provided, it appears we are over budget when the add alternate is added in. However, due to the volatile bid climate, we decided to proceed with the design and bidding for this work, and decide the best course of action when the actual costs have been determined.

No cost estimate was developed for the final computer network specifications.

Although the Building Committee had been provided with a \$119,450 cost estimate for the computer network, the scope of the network specifications was expanded after the initial cost estimate was prepared. According to the former Vice President of CommuniTech,²⁸ the initial cost estimate did not include pricing for an intercom system that was added to the final specifications, nor did it include pricing for wall cabinets to house the computer cabling and equipment.

Plans to obtain competitive bids on the computer network were abandoned. The project records contain a letter, dated April 7, 1993, from an intern employed by OMR. The letter instructed P.J. Stella, the general contractor, to obtain bids on the computer network from "as many qualified subcontractors as you deem necessary." Attached to the letter were the plans and specifications prepared by CommuniTech for the network.

²⁸ This individual, who prepared the initial cost estimate and the final specifications for the computer network, left CommuniTech in early 1995. He agreed to discuss the project by telephone with staff of the Office of the Inspector General.

Although the electrical subcontractor, Griffin Electric, was offered the opportunity to submit a bid on the work, Griffin Electric declined to do so unless awarded a no-bid change order. In a letter to P.J. Stella dated April 27, 1994. Griffin's project manager wrote:

(W)e see no reason why Griffin Electric should have to provide all associated costs on a competitive basis. As a result of this dilemma, we will not be bidding this facet of the work due to the facts of history stated herein.

P.J. Stella defended Griffin's position in a letter to OMR dated April 27, 1994:

As I have discussed with you, we agree with Griffin's position and we feel that they should be afforded the opportunity to perform this work as a contract change order, as described in the contract documents.

Also as I have pointed out to you, there is a significant amount of interaction with the original scope of electrical work regarding this change. If a third party is involved, a substantial amount of additional coordination and management will be required, also there will be the possibility of vague and misunderstood responsibilities. This could ultimately lead to increased costs and time delays.

Within a day, the plan to require competitive bids on the computer network had been dropped. On April 28, 1993, P.J. Stella wrote back to Griffin:

This matter was discussed at a jobsite meeting today with the Architect.

Be advised that the Architect has changed his previous position and he has now instructed us not to solicit cost proposals from third parties. . . .

The Architect has agreed with us that it makes the most sense for Griffin Electric to do this work and they will provide their utmost cooperation during the approval process.

Finding 15.

The computer network installed by change order did not include the intercom system called for in the specifications prepared by the network design consultant.

The exclusion of the computer network from the project bid specifications had left the project with two problematic options. Bidding the computer network separately would mean adding a new contractor to the project in the midst of construction. On the other hand, the decision to procure more than \$100,000 of computer equipment and services on a noncompetitive basis was potentially wasteful. Without an independent cost estimate, the project had little protection against inflated pricing. Even after plans for the network were scaled back, the change order cost the project far more than the Building Committee had anticipated.

The first noncompetitive change order proposal for the computer network was priced at \$209,229. On May 28, 1994, P.J. Stella submitted a \$209,229 change order proposal to OMR for the computer network. The accompanying letter from Griffin Electric made clear that the proposal did not include all of the work set forth in the specifications prepared by CommuniTech. For example, the specifications required the contractor to carry the cost of the millwork required in the classrooms to conceal the wiring. Griffin Electric's letter stated: "All systems will be installed with open wiring; no conduit raceways included."

The second, scaled-back change order proposal was priced at \$186,020. To reduce the cost of the change order, OMR authorized Griffin Electric to substitute a more modest manual handset system for the direct dial telephone system

called for in the specifications. For the Building Committee meeting held on June 17, 1994, OMR's minutes reported:

The next topic was networking, another complicated subject. OMR circulated a change order for \$186,020 for this work. (A Committee member) asked why this work was not included in the base bid. We explained that Networking has always been viewed as an independent project with a separate budget. This was done for a number of reasons, most importantly, we had not decided on an approach or a design at the time the project was bid.

The final \$165,570 change order failed to set forth the changed scope of work for the computer network. The final change order for the computer network was executed on August 2, 1993. Arriving at this price had required elimination of the manual handset system (which had replaced the more sophisticated telecommunications system called for in CommuniTech's specifications.)

OMR's design contract required OMR to provide a series of services in connection with change orders, including "preparation, reproduction and distribution of drawings and specifications to describe Work to be added, deleted or modified." But the change order prepared by OMR contained no description at all of the work to be performed. Instead, OMR merely referenced P.J. Stella's proposed change order, which referenced CommuniTech's specifications. The only indications in P.J. Stella's proposed change order that CommuniTech's specifications had been altered consisted of the following cryptic references:

Reference is also made to meetings and discussions between the parties to agree on the scope of this change, as summarized in Griffin Electric's proposal letter dated 5/25/93. . . .

Revised per Griffin Electric's revised proposal dated 6/25/93, incorporating discussions at the 6/11/93 jobsite meeting and alternates requested by the Architect and Owner, as listed and described in Griffin Electric's proposal dated 6/15/93.

The change order did not summarize the deleted work items listed in original specifications, the reasons for the deletions, or the work items authorized under the change order. In the absence of such documentation, neither P.J. Stella nor Griffin Electric could be held accountable for performing the work agreed upon in the discussions referenced in the change order.

Finding 16.

Administrative markups and expenses accounted for 20 percent of the \$165,570 computer network change order.

Two factors contribute to the high cost of change orders: the absence of competition and the contractually required administrative markups. Construction contracts typically permit the contractor and the subcontractors to charge administrative fees based on a percentage of the cost of every item procured under a change order.

In the case of the computer network change order, labor and equipment accounted for only \$132,113. The remaining \$33,458 constituted administrative markups and expenses paid to P.J. Stella and Griffin Electric. In the following table, these administrative costs are shown in boldface type:

Network equipment and labor subcontracted by Griffin Electric to Northeastern Communications:	\$100,481
Griffin's 15% markup on change order work:	\$15,072
Changes to the specifications negotiated with OMR:	\$10,438
Total paid to Griffin:	\$125,991
 P.J. Stella's 10% markup on subcontractor change order work:	 \$12,599
P.J. Stella's change order work:	\$21,194
P.J. Stella's 15% markup on change order work	\$3,180
Cost of bonds for Griffin Electric and P.J. Stella:	\$2,607
Total change order price:	\$165,570

Finding 17.

***The computer network change order
delayed the project schedule.***

The minutes from a special construction meeting held on August 4, 1993, spelled out the impact of the computer network change order on other project work:

The networking change order has been approved. The size of the available work force from Griffin is unknown. The ceilings can't be completed before the network wiring is done. The lockers are being delayed by the ceiling installation, which may be delayed by the networking.

The minutes from the construction meeting held on September 15, 1993, reported that delays caused by the computer network could affect school operations:

The two factors delaying work in the '56 main corridor were identified as the cove lighting and the network cabling. After these are resolved, the lockers can then be installed. . . . Apparently, some work in the corridor areas will be incomplete when school opens.

Although the decision to issue a no-bid change order to Griffin Electric was supposed to protect the project from cost increases and schedule delays, the cost of the network increased almost immediately after the network change order was approved. P.J. Stella sent Griffin Electric a letter on August 13, 1993, authorizing Griffin Electric to incur overtime expenses in connection with the network and other electrical work items. A \$22,566 change order was executed in August, 1993. This change order indicated that \$4,661 of the total was attributable to "overtime - electrical," but did not indicate what portion of this amount was directly related to the computer network.

But as of March 1994, the computer network was not yet installed. The minutes from the Building Committee meeting held on March 29, 1994, indicate that the Building Committee was considering a plan to have the School Department perform some of the change order work:

(The Media Center Director) also expressed concern with the miscellaneous electrical and networking items getting done. OMR expressed their concern about the cost of these additions and has requested a meeting with (School Department maintenance personnel) . . . and the Electrical sub-contractor to see if they can perform some of this work in-house.

Finding 18.

Improper installation of the computer network delayed completion of the work until February 1995.

As part of the computer network change order, P.J. Stella was required to have the network tested by a manufacturer-trained technician and provide written certification to the School Committee that the system functioned properly. In a letter to OMR dated May 19, 1994 -- nine months after the network change order was executed -- CommuniTech's Vice President reported on the results of several site inspections he had conducted under an agreement with OMR.²⁹ His letter cited a series of installation problems, including dust-covered equipment, improperly installed cables, and the lack of electrical power in the equipment room.

Three months later, the computer network was still improperly installed.

CommuniTech advised OMR, in a letter dated August 29, 1994:

On August 29, an attempt was made to certify the 10BaseT Network at Pollard School. The Cable Network as installed does not meet the criteria detailed in the Specification dated March 6, 1993. Therefore the Cable Network does not meet 10BaseT standards and cannot be certified at this time.

CommuniTech's letter contained a lengthy list of defects, including unmounted equipment and numerous instances of excessive cable lengths, and warned:

Time is short prior to the start of school and resolution of these problems should be addressed as soon as possible.

²⁹ The project records contained no written agreement between OMR and CommuniTech. However, it appears that OMR agreed to CommuniTech's proposed \$2,100 fee for construction management services.

P.J. Stella's contract was settled before the computer network was certified.

Under the computer network change order, P.J. Stella was required to furnish written certification that the computer network had been tested by a manufacturer-trained technician and that the network functioned properly. However, the town settled P.J. Stella's contract on January 13, 1995. The computer network was not certified until February 22, 1995.

OMR was paid \$8,557 in additional fees relating to the computer network change order in July 1993.³⁰ The Building Committee meeting minutes contain no record of a vote on this fee increase, nor was OMR's contract amended to reflect the additional fees.

³⁰ Although financial records at both the School Department and OMR show that OMR received \$16,557 in connection with the computer network, these records are inaccurate. Both sets of records state that the \$42,000 addendum to OMR's contract included a fee of \$8,000 for the computer network; in fact, the \$42,000 addendum contained no fees for the computer network.

II. THE KITCHEN REDESIGN CHANGE ORDER

Finding 19.

OMR was paid an additional \$8,000 to expand and relocate the kitchen during the design phase.

Three months after OMR began design work on the Pollard School project, OMR advised the School Department that the kitchen and cafeteria areas of the school needed to be expanded in order to meet standards set by the Massachusetts Department of Education. In a letter to the School Department dated March 30, 1992, OMR estimated that the required expansion would increase the project budget by \$49,500: \$8,000 in design fees and \$41,500 in construction costs. In a letter to Town Counsel dated April 27, 1992, explaining the basis for the additional fees requested by OMR, OMR stated:

The cafeteria and the kitchen are new and expanded to meet . . . (state) standards. Some new kitchen equipment should be added and a kitchen designer should be hired as a "special consultant" to select and lay out equipment for the kitchen.

Although OMR was recommending that a kitchen consultant be hired, OMR's contract prohibited OMR from using any consultant without written approval from the School Committee.

The explanatory materials distributed by the School Department to Town Meeting Members prior to the May 4, 1992, Town Meeting advised Members that the budget estimate for the Pollard School project had increased from \$6,029,000 to \$6,995,000. One of the items listed as contributing to the cost increase was "replacement and upgrade of kitchen," budgeted at \$45,650.

On June 7, 1992, Town Counsel denied OMR's request for \$8,000 in additional fees:

A renovated kitchen and cafeteria were included with the original project scope which was for a school with an enrollment of 1,050. That enrollment has not changed and neither have the (state) . . . requirements which apparently mandate the work under this item.

OMR violated its design contract by hiring a kitchen consultant without written approval from the School Committee. After Town Counsel denied OMR's request for additional fees, OMR acknowledged having hired a kitchen consultant without the contractually required written approval. In a letter to the School Building Committee dated July 31, 1992, OMR's project manager explained the situation this way:

The feasibility study placed a small addition onto the cafeteria with no work being done to the kitchen. In planning the new work with the SBC (school building committee), and after careful analysis, we moved the cafeteria and kitchen to the lower level. In an effort to provide the best service for our client we hired, with your knowledge, a kitchen consultant to analyze and inventory the existing equipment as well as work with the dietician to come up with a functional design. We made this commitment with the owner's best interest in mind, although it is clearly beyond the scope described in the RFP.

. . . At this time, all we are asking is to be reimbursed for providing a valuable service that would have to be dealt with at a later date by the owner. In hindsight, we should have provided you with the options before we authorized the retaining of a consultant. Unfortunately, the work has been completed at this time, so we are essentially making two requests: one, that you support the decision we made on your behalf; and two, that you reimburse us for the excellent work that the consultant has done.

But Town Counsel continued to oppose OMR's request for reimbursement. On August 7, 1992, Town Counsel wrote:

If this work was truly required by the . . . (state) for enlarged enrollment I consider it "code" related and within the original scope. But I am not sure that is an accurate description. I understand it to be more an issue of the Architect hiring a Kitchen Consultant without the advance written approval of the School Building Committee and designing a program for relocating the kitchen and kitchen equipment. . . .

Especially in light of the fact that the Architect hired this Consultant without the written approval of the Owner pursuant to Paragraph 2.1.4 (of OMR's contract), the Committee seems justified in refusing this request for additional fees.

On February 2, 1993, the School Committee executed a \$42,000 addendum to OMR's contract that included \$8,000 for expansion and relocation of the kitchen and cafeteria during the design phase. By this time, however, the Building Committee was contemplating another kitchen redesign (discussed later in this section).

Finding 20.

The name-brand kitchen equipment specified in the bid documents did not comply with legal requirements.

The final design specifications prepared by OMR called for extensive renovations to the existing kitchen in the Pollard School. The specifications required the kitchen renovations to be carried out by a designated "Foodservice Equipment Subcontractor," who would provide detailed plans and shop drawings for the kitchen renovation work. The specifications called for the contractor to furnish staging and scaffolding for performance of the kitchen renovations; 47 pieces of name-brand kitchen equipment to be installed by the contractor; and all plumbing, electrical, steam, and general accessories for the specified equipment.

Under M.G.L. c.30, §39M, a Massachusetts bidding statute governing construction projects, specifications must be written to either identify by name three brands that conform to the specifications or provide a general product description that can be met by at least three manufacturers.³¹ Bid specifications that call for the contractor to furnish name-brand equipment must contain an "or equal" clause. The "or equal" clause allows the contractor to supply an item from a different manufacturer as long as the item's performance -- i.e., quality, durability, appearance, strength, design, and function -- is equal to that of the specified brand.

However, the kitchen equipment specifications included in the final bid package prepared by OMR did not list three brands or manufacturers for each piece of kitchen equipment nor an "or equal" clause, as required by law. When asked about this omission, OMR's project manager stated that OMR did not intend the equipment specifications to be proprietary.

Finding 21.

The Building Committee's decision to revise the kitchen design during the construction phase led to significant project cost increases and schedule delays.

Soon after construction began on the Pollard School, the Building Committee decided to authorize further design changes to the kitchen and cafeteria, apparently at the recommendation of the Pollard School's newly hired Director

³¹ Use of proprietary specifications is legal only if the awarding authority can make a showing that there are sound reasons in the public interest for restricting competition to one supplier.

of Food Services.³² According to the minutes of the Building Committee's meeting on February 2, 1993:

The food service requested some plan changes, i.e., larger freezer, 2 serving lines, less storage. The committee has decided to go ahead with design work as proposed under \$3,000. OMR will estimate the construction costs at an early stage and advise the Pollard Building Committee prior to doing detailed working drawings. The Pollard Building Committee will have a second opportunity to authorize this work after we receive a formal change order proposal from the contractor.

The project records contain a set of design drawings, dated March 23, 1994, for this second kitchen redesign. These later became the basis for the kitchen change order.

OMR estimated the cost of the kitchen change order at \$50,000 and warned that further delays could adversely affect the project schedule and cost. The Committee minutes from the meeting on March 30, 1993, stated:

Next we (OMR) presented a sketch with an estimate of the cost for the proposed revision to the kitchen. The cost associated with this change is about \$50,000. The PBC (Pollard Building Committee) wants a small sub-committee . . . to meet and review the plan in detail and propose alternatives to reduce the cost of this redesign if possible. It will be necessary for the sub-committee to determine that all the proposed additional costs are necessary. . . . Further delays deciding this could have serious scheduling and cost implications.

P.J. Stella was first made aware of the pending kitchen redesign in March. The construction meeting minutes for March 29, 1993, referred to the pending kitchen

³² The Director of Food Services had been hired in the summer of 1992, well before the final design was put out to bid in November of that year. It is not clear why the Director's views were not taken into account before construction began.

change order but indicated that P.J. Stella was continuing to work in the kitchen area:

This area is being revised by the owner so we shouldn't spend too much time on it. OMR will issue a formal change when we know exactly what the change will be. There are a number of miscellaneous changes required in the kitchen area. These will be taken care of as part of the redesign.

On May 3, 1993, OMR sent a letter to P.J. Stella stating that P.J. Stella would be receiving revised plans for the kitchen from OMR's engineers and that they should suspend work in the affected area until further notice. The letter did not define the precise tasks or area in which work was to be suspended. OMR's letter also expressed interest in the cost and schedule impacts of the kitchen revisions but contained no specific instructions or deadlines for P.J. Stella to provide this information:

Concerning the ongoing work in the area affected by the proposed change we ask at this time that all work in this area that might be affected by this change be suspended until further notice. At some point, probably after our engineers respond, we will meet with you to see how to best proceed. Please keep us advised as to the impact this direction is having on the schedule, and more importantly, any cost implications to the owner.

In May 1993, five months into construction, the Building Committee was still reviewing the kitchen redesign plans. According to the minutes of a "special kitchen meeting" held on May 13, 1993:

The purpose of the special meeting was to approve additional fees for consultants to make revisions to the new kitchen design. We opened the meeting with a review of the kitchen revision process to date. . . . (The Director of Food Services) then gave the committee an explanation and justification for the proposed changes. The revisions are being driven by changes in policy and staff. . . . It is important to note that . . . (the Director) was not part of the design team when the original design was done.

Costs for the kitchen change order were discussed in the minutes; however, the minutes did not indicate whether or not OMR's \$50,000 estimate was still reliable:

The PBC (Pollard Building Committee) has already approved the Kitchen consultant's additional fees. OMR requires approval for additional fees for the engineers to make their revisions. The costs are approximately \$3,500 for each discipline or \$7,000. This is important so the contractor can get a fixed cost for this work from his sub-contractors. OMR will try to reduce these costs, if possible, by doing the work on a time basis not to exceed the cost quoted above. The committee also approved a 10% fee for OMR on the change order.

In a memorandum to the Committee dated June 1, 1993, the Director of Food Services set forth the justification for redesigning the Pollard School kitchen. The memorandum explained that the existing kitchen design called for only one serving line and that two serving lines would provide better service to students while increasing food service revenues. The memorandum also argued that a full-service snack bar was preferable to the self-service table for prepackaged items called for in the existing kitchen design current plan. Attached to the memorandum was a financial analysis estimating that the existing kitchen design would result in an annual loss of \$2,700, whereas the proposed redesign would result in an annual profit of \$18,000.

The kitchen change order delayed completion of the kitchen and cafeteria until April 1994. OMR wrote to P.J. Stella about the kitchen redesign in June 1993. OMR's letter did not emphasize the importance of expediting the kitchen renovations; indeed, OMR indicated that P.J. Stella would not be expected to complete the kitchen renovations by the start of the new school year:

As far as the schedule is concerned. It now appears that we will require at least two weeks to prepare and approve "rough in drawings." At that time the work under the slab etc. can begin. We acknowledge that it will be very difficult if not impossible to have this work complete by the end of the summer.

The minutes from the construction meeting held on June 9, 1993, the same day that OMR sent the letter to P.J. Stella, also indicate that there was no agreement on the schedule for completing the kitchen and cafeteria:

(P.J. Stella) is assuming kitchen won't be ready by September. He will revise schedule as best he can. . . . (P.J. Stella) wants official correspondence to proceed with revised plan. Additional money required for revised work will be calculated by the subs and presented by PJS.

The kitchen change order for \$77,740 was executed on August 4, 1993. The change order contained no explanation of the work to be performed; instead, it referenced two proposed change orders submitted by P.J. Stella for \$76,352 and \$1,388.³³ None of these documents contained a schedule for completion of the kitchen. The only reference to the impact on the project schedule was the following noncommittal comments on P.J. Stella's first proposed change order:

Requested time extension: 14 calendar days.

Note also, as discussed at recent jobsite meetings, this work will not be able to be completed prior to the start of the school year this September, 1993. Arrangements will have to be made to coordinate the phasing of the construction and school activities.

As a consequence of the delayed kitchen renovations, Pollard School students were served lunch in the school gymnasium from September 1993 until April 1994, when the kitchen renovations were completed. Food was prepared at the high school and delivered to the Pollard School during this seven-month period.

³³ The first proposed change order totalled \$77,100 but was listed as totalling \$76,352 on the executed change order. The \$748 discrepancy was not explained on either document.

Finding 22.

***The kitchen redesign change order deleted 24 items
of kitchen equipment from P.J. Stella's contract
but failed to itemize the additional equipment
P.J. Stella was required to provide.***

The original Pollard School bid specifications, which became the basis for P.J. Stella's construction contract, required P.J. Stella to purchase and install 47 items of new kitchen equipment as well as modifying existing equipment in the Pollard School kitchen. Under the kitchen redesign change order, P.J. Stella was required to furnish only half the equipment called for in the contract: 23 out of 47 items. The 24 items of kitchen equipment deleted from P.J. Stella's contract were not deleted from the final design. Rather, the change order shifted the logistical and financial burden of purchasing and installing the 22 items from P.J. Stella to the School Department. The documentation for this change consists of the following cryptic paragraph in P.J. Stella's proposed change order:

Including furnishing and installing the following items per the revised drawings: 6, 14, 18, 19, 22, 25, 31, 33, 35, 37, 38, 39, 42, 43, 45, 46, 47 (1 of 3 only), 48, 51, 52, 54, 55, and 56. All other items will be provided and installed by the owner.

Based on the item numbers listed, the change order transferred from P.J. Stella to the School Department the cost of purchasing and installing the following items:

shelf unit
10 refrigerator shelves
portable table
slicer table
equipment stand

2 pot shelves
2 milk dispensers
refrigerated display
ice cream freezer

Project records contain a June 1993 price list from Boston Showcase Company, the kitchen equipment vendor, showing that the value of the kitchen equipment that P.J. Stella would no longer provide was approximately \$21,000.³⁴

The kitchen redesign change order listed the name of the vendor -- Boston Showcase Company -- and the additional cost to the project -- \$29,920 -- of the kitchen items to be provided by the vendor. However, the change order contained no listing of the items to be provided or their prices.

Project files maintained at the School Department contain no documentation relating to the kitchen redesign change order. The Office of the Inspector General requested an itemized price list of all kitchen equipment delivered to the project under the change order from OMR; however, the project files maintained by OMR did not contain this information. At OMR's request, the kitchen equipment supplier sent a memorandum to OMR, dated March 2, 1995, listing 32 items of kitchen equipment supplied to the project the previous summer. This list contained no price information.

³⁴ OMR's project manager had no information on the process by which P.J. Stella selected Boston Showcase Company to provide kitchen equipment under the change order. Project records contain no evidence that Boston Showcase Company was selected competitively.

Finding 23.

The Pollard School project appears to have been overcharged by more than \$8,000 for the kitchen equipment delivered under the kitchen redesign change order.

The Office of the Inspector General analyzed several equipment lists from OMR's files. The first list was P.J. Stella's schedule of values -- i.e., the prices contained in P.J. Stella's original bid for each item of kitchen equipment listed in the bid specifications for the Pollard School project. The second was an equipment price list prepared by Boston Showcase in June 1993. The third was an undated equipment price list, apparently prepared by the Director of Food Services, showing kitchen equipment items to be deleted from P.J. Stella's contract. As noted above, OMR records contain no information regarding the prices charged by Boston Showcase for the individual items of kitchen equipment delivered to the project.

According to the available records, the project paid \$94,920 for kitchen equipment.³⁵ However, the records show that the value of this equipment was only \$86,522.³⁶ It therefore appears that the town paid \$8,000 more than the value of the equipment purchased.

³⁵ The value of the kitchen equipment bid by P.J. Stella was \$65,000, to which must be added the \$29,920 paid by the project for kitchen equipment under the kitchen redesign change order.

³⁶ According to the available records, the equipment to be procured under the kitchen redesign change order was originally valued at \$107,501; however, the School Department agreed to delete equipment worth \$20,979 from this list.

OMR was paid more than \$13,000 in additional fees relating to the kitchen change order. Of this amount, \$7,774 was a fee to OMR, apparently approved by the Building Committee,³⁷ calculated at 10 percent of the \$77,740 kitchen change order. The remaining fees included payments to three consulting firms as well as OMR's administrative fees in connection with those payments. OMR's contract with the Needham School Committee was never amended to include these additional fees.

³⁷ The Building Committee meeting minutes for May 13, 1993, stated that the Building Committee had approved a 10 percent fee for OMR on the change order but contained no record of a vote on this fee.

CONCLUSION AND RECOMMENDATIONS

This report summarizes the results of the review of the Pollard School project conducted by the Office of the Inspector General. Each of the 23 findings set forth in the preceding pages is specific to the project, the participants, and the circumstances. Taken as a whole, however, the findings offer some lessons for effective management of municipal construction projects.

Like many Massachusetts municipalities, Needham assembled a committee of school officials and community volunteers for the purpose of overseeing the Pollard School project. The extensive time devoted to the project by the Pollard Building Committee members attests to the effort and commitment of this unpaid group. Nevertheless, the findings in this report suggest that a municipality embarking on a complex, multimillion dollar municipal construction or renovation project has a responsibility to invest in full-time, professional project management in order to safeguard the project from excess costs, schedule delays, and design and construction problems.

In the absence of a project manager, the Pollard Building Committee relied on the project designer for policy guidance and contractor oversight as well as design expertise. The designer did not effectively manage and control the project on behalf of the town. As this case illustrates, overreliance on any private consultant or vendor is risky and can be imprudent.

The risks were compounded by procedural lapses within the Needham School Department. Without effective contracting, fiscal control, and record-keeping procedures, a municipality is vulnerable to fraud, waste, and abuse on any contract.

In the current economic and political climate, persuading taxpayers to fund extra project management staff or consultants can be difficult. The problems encountered on the Pollard School project illustrate some of the risks of devoting inadequate resources to project management and oversight functions.

The Inspector General recommends that the town of Needham implement the following management safeguards for future construction and renovation projects:

1. **Assign a project manager to oversee the project from the feasibility study phase through construction completion.** The Pollard School project lacked a single project manager to serve as the focal point of responsibility and accountability for the town. A project manager with fiscal and procurement experience should be responsible for project-related contracts, expenditures, budgeting, and record-keeping.
2. **Hire or contract with an experienced clerk of the works or resident engineer.** The clerk of the works or resident engineer serves as the municipality's representative at the work site. This individual's job responsibilities should include on-site observations of the progress of construction; preparation of daily logs and progress reports; review of shop drawings, samples, and test results; preparation of construction change orders; review of contractor requisitions for payment; schedule coordination; and on-site record-keeping for the project.
3. **Hire or contract with a construction manager for large or complex projects.** If the town's contract with the designer will include services during the construction phase, evaluate the construction management expertise of competing designers as part of the designer selection process. The skills required to manage a building construction or renovation project are distinctly different from those required to design a building or renovations to a building. If the town plans to contract with a single design firm for both design and construction management services, the designer selection process should focus on both sets of skills.

Alternatively, the town could hire or contract with a professional construction manager rather than including construction management services in the design contract. The designer would develop the design and prepare the final plans and specifications, and the construction manager would coordinate the construction process, monitor construction schedules, and approve contractor payments.

4. **Advertise for bids on a complete design that includes all work that can reasonably be anticipated.** On the Pollard School project, neither the Pollard Building Committee nor the designer accorded sufficient attention to the risks of deferring design work that could reasonably have been anticipated -- for example, the computer network and the kitchen redesign -- to the construction phase of the project. On future projects, the town should take steps to ensure that all anticipated design work is completed before bidding the final design plans and specifications. Postponing the bid will generally be a far less expensive and more efficient option than executing a noncompetitive change order later.

Construction change orders should be used as a last resort. They should be issued only for necessary changes to the construction contract due to unforeseen site conditions; circumstances requiring suspension, delay, or interruption of construction; and legitimate requests by the contractor for deviations from the final plans and specifications.

5. **Execute contract amendments to reflect any and all changes in the scope, cost, or schedule of project-related contracts.** The town issued the Pollard School designer a series of payments -- more than \$150,000 in total -- that were not reflected or authorized in the designer's contract or the two contract addenda. To ensure fiscal control over town contracts, the town should institute new contracting procedures that link vendor invoices for payment to specific contracts or contract amendments. The town should not approve any payments to a designer, consultant, or other vendor for project-related services unless such services and payments are specifically authorized under an executed purchase order, contract, or contract amendment.
6. **Create budgetary accounts to facilitate contract monitoring and fiscal control.** In the case of the Pollard School project, the Comptroller's office paid project-related invoices out of a single budgetary account containing \$6.995 million in bond funds for the Pollard School project. This system proved inadequate to protect the town from contract overpayments and accounting errors. Creating separate budgetary accounts for each service contract and in-house expenditure would provide a manageable financial tracking and reporting system.

7. **Ensure that town procurements are legal and competitive.** The town spent more than \$67,000 on furniture and equipment without complying with bid law procedures designed to ensure that the town obtains high-quality items at the best available price. In one case, the town paid the designer a \$4,000 administrative fee to purchase the equipment. The town should ensure that officials with procurement authority are making competitive purchases in accordance with legal requirements. The Office of the Inspector General provides municipalities with extensive information and technical assistance on the requirements of M.G.L. c.30B, the Uniform Procurement Act. The Attorney General's Fair Labor and Business Practices Division is available to answer questions about the state's construction bid laws.
8. **Maintain complete, accurate project records in a central location within the town offices.** Poor record-keeping is a major impediment to efficient contract administration and oversight. In the case of the Pollard School project, detailed project documents were generally kept by the designer but not by the town. No records were kept of Building Committee votes, six months of key meeting minutes were lost, and some site documents kept by the first clerk of the works have never been located. To safeguard future projects from such record-keeping lapses, the town should institute workable record-keeping procedures and central project files.

APPENDIX A: THE TOWN OF NEEDHAM'S RESPONSE

Needham Public Schools

1330 HIGHLAND AVENUE • NEEDHAM, MASSACHUSETTS • 02192

Telephone (617) 455-0400 • For TTY Service (617) 455-0424

May 24, 1995

Robert A. Cerasoli
Inspector General
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Dear Mr. Cerasoli:

Thank you very much for the opportunity to examine your review of the Pollard Middle School renovation project. Let me begin by saying that your staff members who worked with the Needham Public Schools on this investigation were thorough, thoughtful, and courteous at all times. They are fine representatives of their profession.

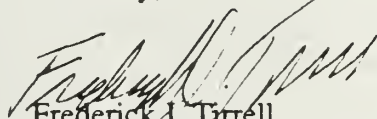
We found your report to be thorough, complete, and very helpful. It is pleasing to note that some of the suggestions you made were put into place by us prior to your report and others can be put into place.

It seems clear that the financial limitations with which we have been burdened in recent years, as well as capacity deficits with regard to our lack of administrative positions, had an impact on this project. Some items that were in the original design were cut in order to reduce the price and to make the project more financially attractive to the community. They should have been retained in the project. This is clearly true with respect to the heating, ventilating, and air conditioning systems. The reductions that we have seen in the administrative staff over the years have spread us too thin; thus, we did not have adequate staffing to be able to supervise the project as well as we should have. These are hard lessons for us, but we hope that we will institute the changes necessary to bring about success in future renovation projects.

We have taken the time to respond to each of the findings and the recommendations. We think that this letter and our responses to your findings and recommendations should be included in the review as an appendix.

Please call me if you have any questions or comments regarding our response. I am sure that, in the long run, your department's efforts will be a benefit to the Town of Needham.

Sincerely,



Frederick J. Tirrell
Superintendent of Schools

FJT:elg
Enclosure

**INSPECTOR GENERAL'S REPORT: POLLARD MIDDLE SCHOOL
NEEDHAM PUBLIC SCHOOLS' RESPONSE TO FINDINGS**

I. PLANNING Findings:	RESPONSES
1) The final design for the Pollard School called for a more expensive, complex, and disruptive project than that envisioned by the town's Feasibility Study.	The Feasibility Study was a basic review of all our facilities except Needham High School. It did not consider specific solutions nor final design. Final design was completed after consultation with staff, the project architect and the evaluation of future school needs. The Office of Michael Rosenfeld (OMR), the architects, made suggestions for reconfiguration, as well as for renovation and additions. The final design had the potential of being more disruptive than originally envisioned. OMR assured us that we could proceed with construction within an occupied building. This final design was done as required under MGL Chapter 149.
2) The Pollard School project lacked a single manager to serve as the focal point of responsibility and accountability for the Town of Needham.	This is true. School Committee has accepted the administration's recommendation to employ a project manager for any further renovations.
II. FISCAL CONTROL Findings:	
3) Although the School Department awarded the design contract to OMR for a fixed fee of \$300,000, the cost of OMR's contract ultimately doubled.	The original contract was \$400,000 -- \$300,000 for design work; \$100,000 for construction administration. In addition, the design part included an hourly charge for design work beyond the original scope. The Clerk of the Works' position was not part of the original contract with OMR. The contract should have been amended at this time.
4) The School Department appears to have forwarded OMR's invoices to the Comptroller for payment without verifying the accuracy of the amounts billed.	OMR's invoices were reviewed and signed by the School Department. Errors in payment were made by the accounting clerk. Corrections to these errors were made within two payment cycles.

**INSPECTOR GENERAL'S REPORT: POLLARD MIDDLE SCHOOL
NEEDHAM PUBLIC SCHOOLS' RESPONSE TO FINDINGS**

RESPONSES

5) The School Department violated municipal procurement law by paying OMR \$32,140 for furniture that should have been procured through an advertised competition.	The Pollard Building Committee asked OMR if this had been done in public projects and was doable. The PBC was told that it was, and that OMR could get the furniture quicker and cheaper than we could. We have since learned that this was not allowable under 30B. In the future, we will check with Town Counsel or the Chief Procurement Officer when such a question arises.
6) The School Department's \$35,050 purchase of shelving for the Media Center violated the state's construction bid law.	This is an error. The Needham Public Schools did not violate the law. Proper bid specs were drawn and the law followed. The Needham Public Schools has documentation to support this. *
7) The Town of Needham overpaid the Pollard School construction contractor by more than \$400,000 during the first quarter of 1994.	The OMR contract made them responsible for verifying and certifying that these payments were due and recommending to the PBC that payments should be made. Because of this, it was assumed that OMR was certifying the accuracy of these requisitions. In retrospect, it is apparent that they were not doing this.
III. SCHEDULE CONTROL Findings:	
8) OMR did not issue a final certificate for payment to P. J. Stella.	This is true because final payment was made to the contractor through negotiations by Town Counsel. OMR was present at these negotiations and confirmed to Town Counsel that final payment should be made and the amount to be paid. State forms for final payment were not used.
9) OMR did not adequately monitor and control the project construction schedule.	The Needham Public Schools agrees with this finding. We will monitor all construction contracts more closely in the future.
10) The flawed and incomplete schedule for procuring and installing windows contributed to project delays and disruption of school operations.	The Needham Public Schools agrees with this finding. Both the PBC and OMR should have been more aggressive in pursuing this delay.

* *The Inspector General's response: The Office has reviewed the documents provided by the Needham School Department and stands by the report finding.*

**INSPECTOR GENERAL'S REPORT: POLLARD MIDDLE SCHOOL
NEEDHAM PUBLIC SCHOOLS' RESPONSE TO FINDINGS**

RESPONSES

11) OMR and the PBC approved 13 construction change orders authorizing open-ended schedule extensions by P. J. Stella.	The PBC voted only two scheduled extensions. The PBC asked OMR's representatives if extensions were required for these 13 change orders. OMR informed the PBC that extensions were not being requested by P. J. Stella. In the future, such statements will be made part of the written change orders.
IV. CONTRACTOR OVERSIGHT Findings: 12) The Clerk of the Works' function was undermined by lack of supervision, personnel turnover, and poor record keeping.	The first Clerk of the Works was supervised by OMR. Subsequent Clerks were responsible to the PBC. The first Clerk hired by the school system had suggested a change in working hours after being employed which was unacceptable to the School Department. She was at this time released from employment. The NPS was not aware that records were not provided by the first Clerk to the other Clerks until after the project was completed. A system of checking on the records will be instituted for all future projects. The Needham Public Schools was unaware that the third Clerk was not conducting inspections. There were daily discussions with the Clerk and he never raised this as an issue. This will be closely watched in the future.
13) The construction administration services provided by OMR were deficient.	The Needham Public Schools agrees with this finding. Future contracts will include more specific language regarding contract administration.

**INSPECTOR GENERAL'S REPORT: POLLARD MIDDLE SCHOOL
NEEDHAM PUBLIC SCHOOLS' RESPONSE TO FINDINGS**

RESPONSES

EXAMPLES OF INADEQUATE PROJECT CONTROL Findings: 14) The decision to exclude the computer network from the original project design was wasteful and inefficient.	The decision by the PBC to exclude the computer network was based upon concern for limited financial resources. We have learned that we should not be attempting to shape the total dollar amount of our project to meet certain cost limitations but to include those items that we really believe are important, such as the computer network.
15) The computer network installed by change order did not include the intercom system called for in the specifications prepared by the network design consultant.	The PBC decided to include the computer network and later decided to integrate it with the intercom network. The change order was not clear. In the future, the Needham Public Schools will require all change orders to be specific and clear.
16) Administrative markups and expenses accounted for 20 percent of the \$154,570 computer network change order.	The Needham Public Schools agrees with this finding.
17) The computer network change order delayed the project schedule.	The Needham Public Schools agrees with this finding.
18) Improper installation of the computer network delayed completion of the work until February 1995.	The Needham Public Schools agrees that the computer network completion was delayed by improper installation.
19) OMR was paid an additional \$8,000 to expand and relocate the kitchen during the design phase.	The Needham Public Schools agrees that OMR was paid additional funds for additional work. OMR should have obtained prior written authorization for such work. This is already being implemented in present renovation projects, such as the Newman School.
20) The name brand kitchen equipment specified in the bid documents did not comply with legal requirements.	The Needham Public Schools agrees with this finding. It appears that OMR did not follow specific procedures.

**INSPECTOR GENERAL'S REPORT: POLLARD MIDDLE SCHOOL
NEEDHAM PUBLIC SCHOOLS' RESPONSE TO FINDINGS**

RESPONSES

21) The PBC's decision to revise the kitchen design during the construction phase led to significant project cost increases and schedule delays.	The Needham Public Schools agrees with this finding. After the design was begun, a new Director of Food Services was appointed who had specific ideas on kitchen improvements. Although the changes were appropriate, the PBC should have moved faster to institute the changes to the kitchen which would have reduced schedule delays.
22) The kitchen redesign change order deleted 24 items of kitchen equipment from P. J. Stella's contract but failed to itemize the additional equipment P. J. Stella was required to provide.	The Needham Public Schools agrees with this finding. OMR did not provide specific and detailed equipment lists to P. J. Stella in the change order. The Needham Public Schools now requires written, specific change orders for all projects for the Building Committees to review and vote upon.
23) The Pollard School project appears to have been overcharged by more than \$8,000 for the kitchen equipment delivered under the kitchen redesign change order.	The Inspector General may be correct, but it is difficult to reconstruct because of the lack of documentation in the change order prepared by OMR.

RECOMMENDATIONS and RESPONSES

RECOMMENDATIONS	RESPONSES
1) Assign a Project Manager to oversee the project from the Feasibility Study phase through construction completion.	The School Committee approved administrative recommendations on the use of the Project Manager starting with the design phase through completion of construction.
2) Hire or contract with an experienced Clerk of the Works or resident engineer.	The decision to employ a Clerk of the Works or resident engineer will be determined by the size and complexity of the project. In some instances, positions of Project Manager and Clerk of the Works will be combined into one position.
3) Hire or contract with a construction manager for large or complex projects.	The Building Committee will review the experiences and skills of design firms as they relate to the project. There are two options for construction management: 1) Use the design firm or 2) hire a different and independent firm. In the future, we will evaluate a firm's construction management capabilities separate from its design capabilities. The selection committee will carefully evaluate the past experience and abilities of firms before hiring them to oversee the construction contract.
4) Advertise for bids on a complete design that includes all work that can reasonably be anticipated.	The Needham Public Schools agrees with this recommendation and has implemented it with Newman and Pollard HVAC renovations.
5) Execute contract amendments to reflect any and all changes in the scope, cost, or schedule of project-related contracts.	The Needham Public Schools agrees with this recommendation and has done this on subsequent projects.

RECOMMENDATIONS and RESPONSES

RECOMMENDATIONS	RESPONSES
6) Create budgetary accounts to facilitate contract monitoring and fiscal control.	The Needham Public Schools agrees with this recommendation. This was done at the beginning of the Pollard project. When the new accounting system was instituted in April 1994, sub accounts were rolled into one. In the future, the Needham Public Schools will ensure that individual projects will be broken into appropriate sub accounts and will provide monthly reports to the Building Committees.
7) Ensure that town procurements are legal and competitive.	The Needham Public Schools agrees that all town procurements should be legal and competitive and they are. Future procurements will be reviewed with Town Counsel and Chief Procurement Officer.
8) Maintain complete, accurate project records in a central location within the town offices.	The Needham Public Schools agrees with this recommendation. The Needham Public Schools will provide a central location for project records and minutes and will regularly monitor their status.

Needham School Committee

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May 25, 1995

Robert A. Cerasoli
Inspector General
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Dear Mr. Cerasoli:

Thank you very much for the opportunity to examine the confidential draft report of the Pollard Middle School renovation project. I am pleased that the focus of your analysis was to examine the questions of how some problems might have been prevented and how future municipal construction and renovation efforts can be better managed and controlled. These are the same questions that the School Committee, the Pollard Building Committee, the Pollard Health and Safety Advisory Committee, and Town Meeting have already begun to address. Your findings and recommendations will be invaluable to us in this process.

Both Dr. Tirrell and I have carefully reviewed the findings and recommendations in your report. We appreciate the opportunity to comment on the report before it is released to the public. Our responses are attached to Dr. Tirrell's letter.

Please call me if you have any questions or comments regarding our response.

Sincerely,



Karl H. Clauset, Jr.
Chairman,
Needham School Committee

